APPENDIX A

ENGINEERING APPENDIX

ATTACHMENT C Resistivity Report

PART 4

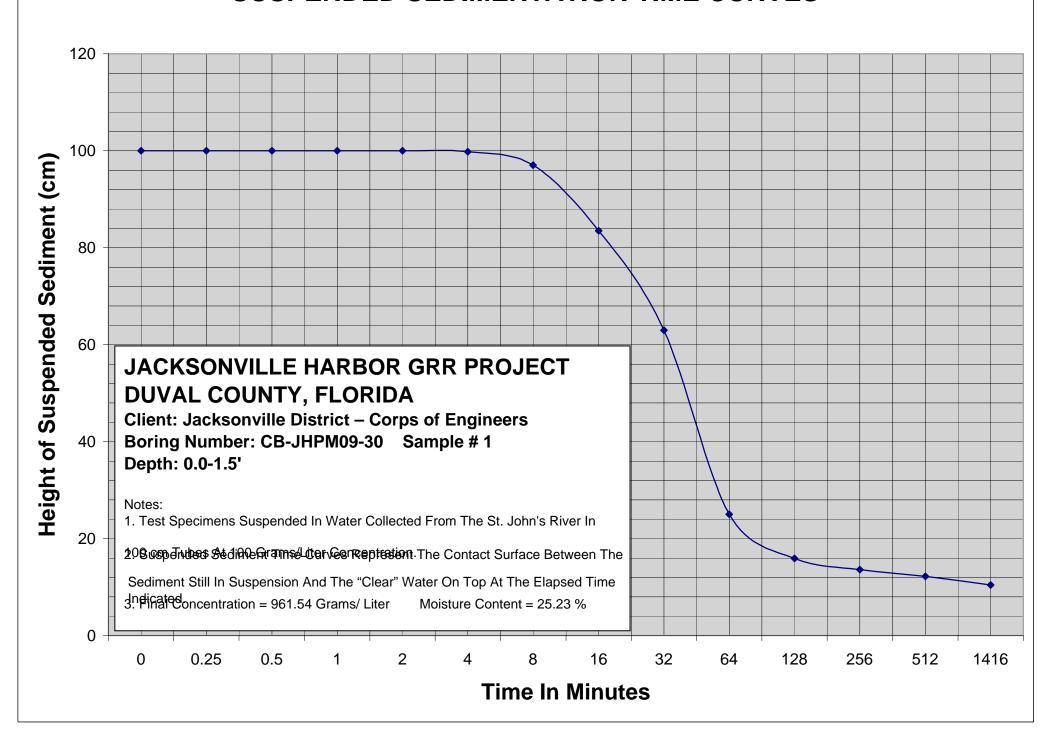
Jacksonville Harbor Navigation Study, Duval County, Florida

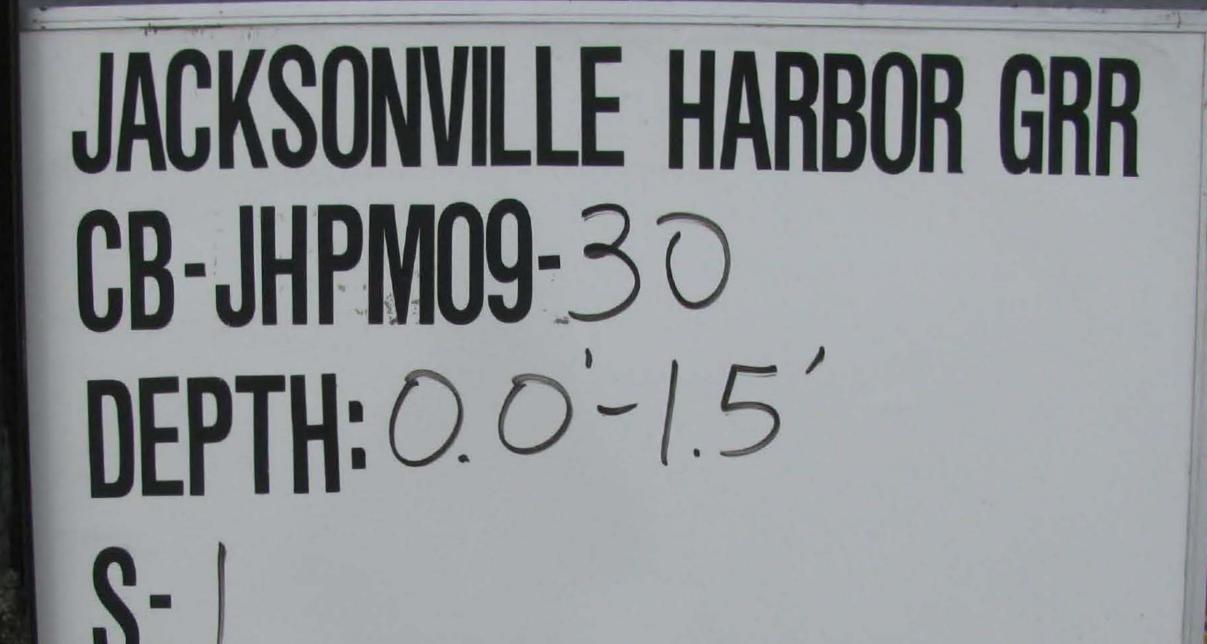
DRAFT
INTEGRATED GENERAL REEVALUATION
REPORT II AND SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT

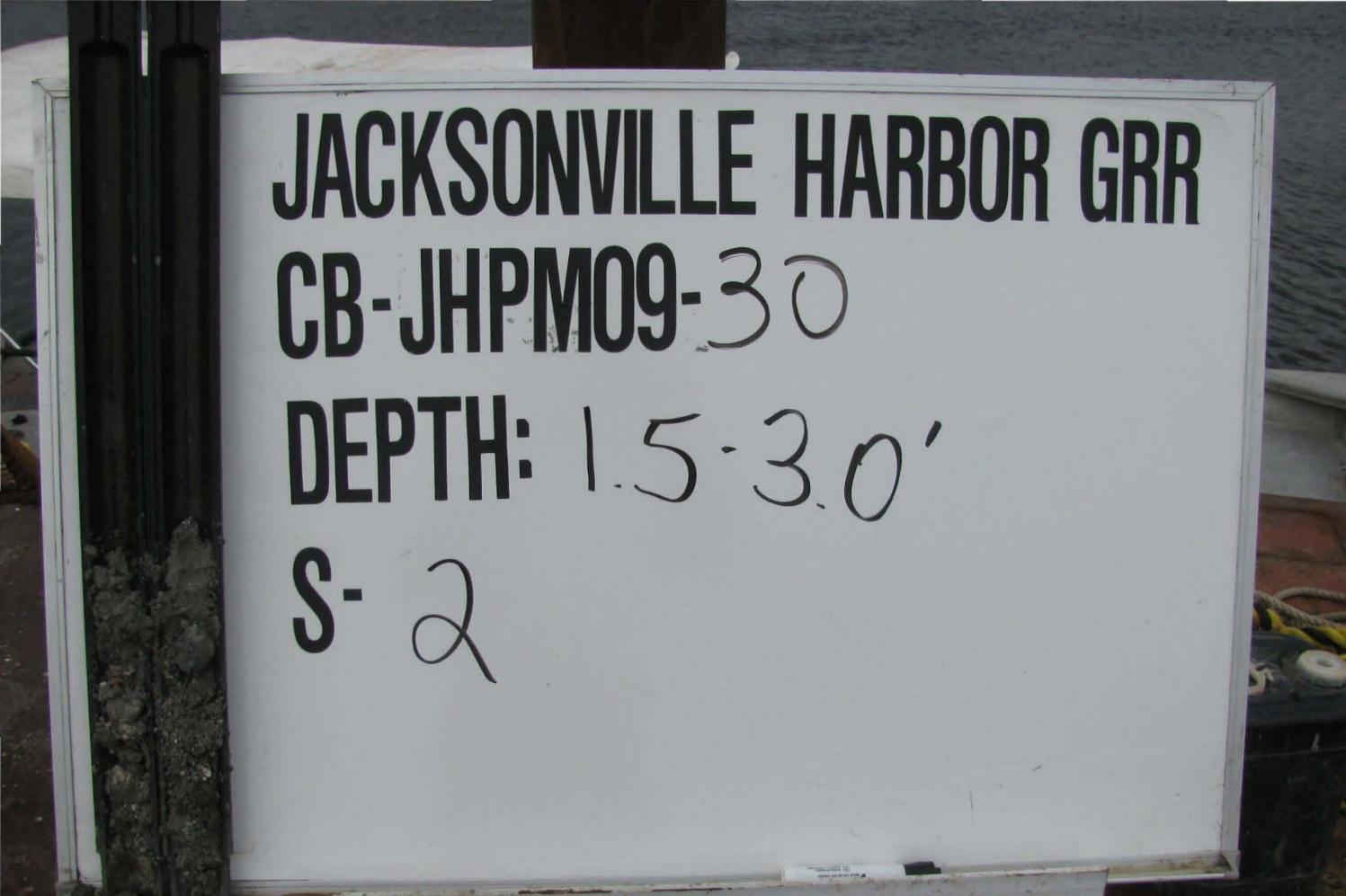
<u> </u>					g Designation CB-JHPM09		
DRILLING LOG South Atlantic	1	TALL/ acks			istrict	SHEET 1	FFTS
PROJECT South Atlantic	+				E OF BIT See Remarks	101 2 3HE	
Jacksonville Harbor General Reevaluation Report (GRR)			–		SYSTEM/DATUM HORIZONTAL	VERTICAL	
ST. JOHN'S RIVER CHANNEL					ne, FLE (U.S. Ft.) NAD83	MLLW	
BORING DESIGNATION LOCATION COORDINATES	11.						
CB-JHPM09-30 $X = 520,152$ $Y = 2,205,593$ DRILLING AGENCY CONTRACTOR FILE NO.					DISTURBED U		
Challenge Engineering & Testing, Inc. 2009D08	+	TOT			LES 11	0	
Marvin Strickland	-				SER CORE BOXES 2		
DIRECTION OF BORING DEG. FROM BEARING	14.	ELE	VAT	ION G	GROUND WATER TIDAL	T	
VERTICAL INCLINED INCLINED	15.	DAT	E BO	ORING	STARTED 08-27-09	i	
THICKNESS OF OVERBURDEN N/A	16.	ELE	VAT	ION T	TOP OF BORING -45.1 Ft.	1 00 27 00	
	_				VERY FOR BORING 71 %		
DEPTH DRILLED INTO ROCK N/A	18.	SIGI	VAT	JRE A	AND TITLE OF INSPECTOR		
TOTAL DEPTH OF BORING 16.5 Ft.	<u> </u>		_	Thor	npson III, Civil Engineer		
CLASSIFICATION OF MATERIALS	RÉ	% EC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
45.1 0.0		一			<i>1</i> 5.1		
45.1 0.0 SAND, silty, mostly angular to subangular		+	\dashv		-45.1	10	
L	e	₅₇	1		SPT Sampler		
silt, wet, 5Y 5/2 olive gray (SM)	آ آ	´'			·		22
E \f\f\]	\vdash	+	\dashv		-46.6		
F		_	<u> </u>		007.0		
At El47.6 Ft., little angular to subangular	6	67	2		SPT Sampler		15
shell up to 2", 5Y 5/1 gray	\vdash	\perp	_		-48.1		
t ∤1∤1						12	
<u> </u>	7	73	3		SPT Sampler	7	14
E	L				-49.6	7	
E IIII						5	
At El50.1 Ft., 5Y 5/2 olive gray	7	73	4		SPT Sampler	4	4.4
-51.1 6.0					-51.1	7	1.1
SHELL, mostly angular to subangular shell up to 1", few angular to subangular						4	
fine-grained sand-sized quartz, wet,	6	60	5		SPT Sampler	7	
52.6 7.5 5Y 5/2 olive gray					-52.6	OF 2 SHEETS VERTICAL MLLW AUTO HAMMER MANUAL HAMMER UNDISTURBED (UD) 0	17
SAND, poorly-graded, some angular to	-	\top	\exists		02.0	5	22 15 14 11
subangular fine-grained sand-sized quartz, few angular to subangular shell up to 3/8",	8	30	6		SPT Sampler		
moist, 5Y 5/1 gray (SP)	٦		Ĭ		·		11
	\vdash	+	\dashv		-54.1		
At El54.4 Ft., 5Y 4/2 olive gray		30	7		SPT Sampler		
F 1991	l°	ا ۵	'		·		10
55.6 10.5 SHELL, mostly angular to subangular shell	+	+	\dashv		-55.6		
up to 3/8", few angular to subangular		_					
5V 5/2 olivo grav	6	67	8		SPT Sampler		11
	. L	\perp			-57.1	6	-
At El57.1 Ft., some angular to subangular in fine-grained sand-sized guartz						4	
5)))	5	53	9		SPT Sampler	4	40
					-58.6	6	10
		十	\exists			4	
At El59.1 Ft., mostly angular to subangula	ar 8	37	10		SPT Sampler	5	
shell up to 2", little angular to subangular fine-grained sand-sized quartz					·		12
A L FORM 1836					-60.1 (Continued)	,	

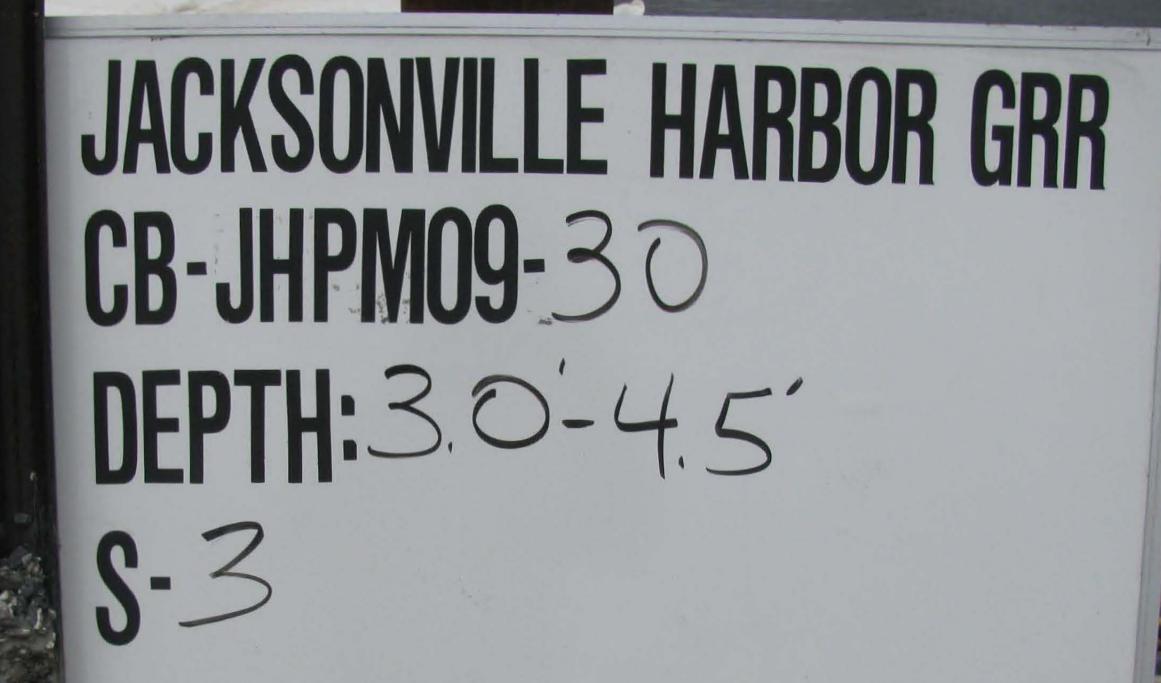
DRI	LLING	LOC	G (Cont. Sheet)	INSTALLA				g Designation CB-JHPIN	SHEET 2 OF 2 SI	
PROJECT		·	Jacksonville District OF COORDINATE SYSTEM/DATUM HORIZONTAL VERTICA						IEEIS	
		rbor (General Reevaluation Report (GRR)	State F					MLLW	
LOCATION	ON COORDI	NATE.	s	ELEVATIO	N TOP	OF E	BORIN	'G		
X = 5	520,152		,205,593	-45.1 F	t.					
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIA	LS	ĸEC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-61.1	16.0))))))))			93	11		SPT Sample	11 er 16	
-61.6	16.5	-: -	SAND, poorly-graded with silt, most angular to subangular fine-grained sand-sized quartz, few silt, dry, 5Y sqray (SP-SM) NOTES: 1. USACE Jacksonville is the custo these original files. 2. Soils are field visually classified accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 4" flush joint steel 4. Water depth recorded at start of operations and referenced to the tid at the Mayport Bar Pilots Dock. 5. Water depth of -48.9 ft. recorded PM on 8/27/09. Tide gage reading of millw	5/2 olive /				-61.6 140# hammer w/30" drop usec 2.0' split spoon (1-3/8" I.D. x 2	d with " O.D.).	- 56
		26. A								

SUSPENDED SEDIMENTATION TIME CURVES







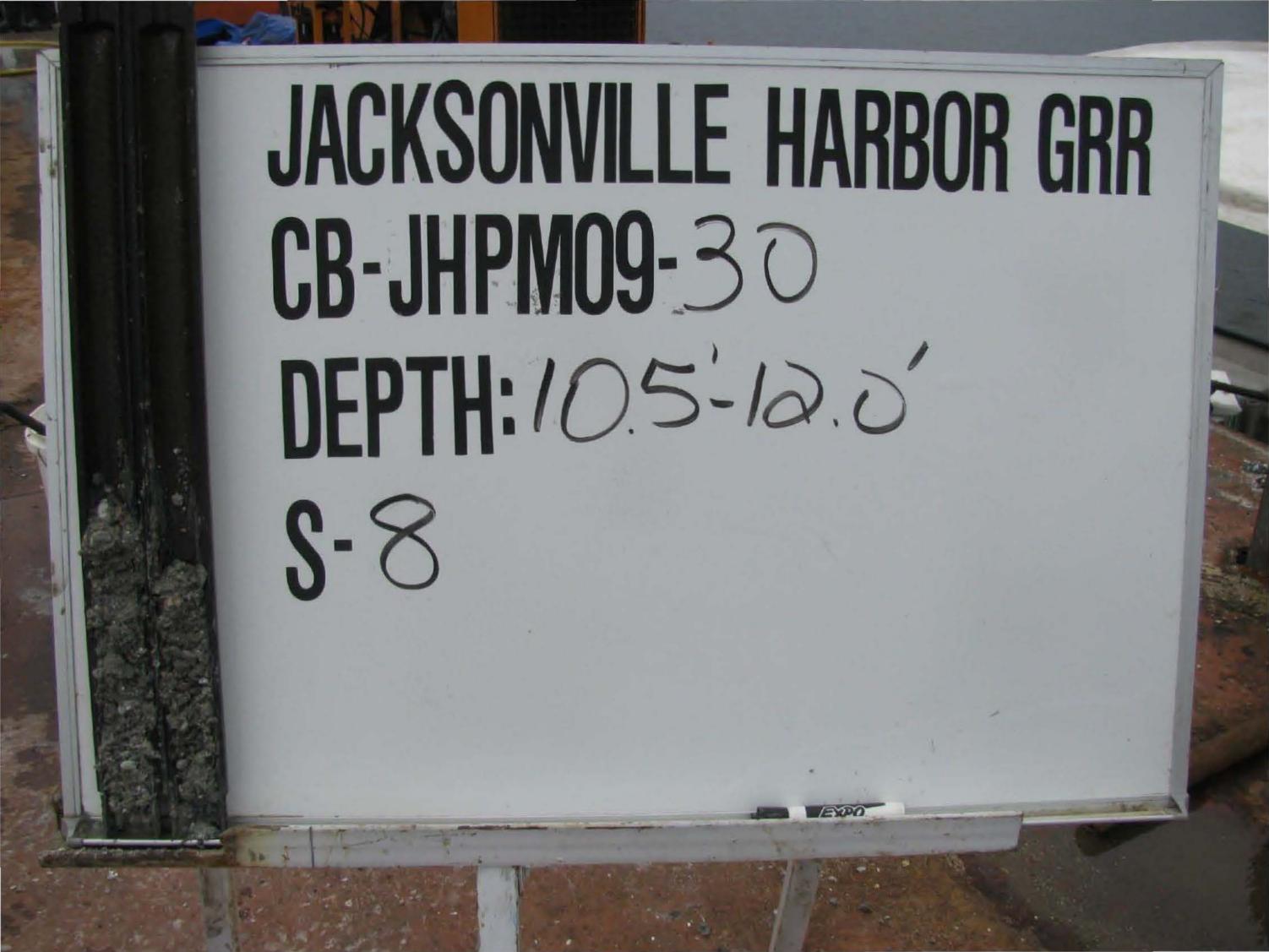


JACKSONVILLE HARBOR GRR CB-JHPM09-30 DEPTH: 4.5-6.0

JACKSONVILLE HARBOR GRR CB-JHPM09-30 DEPTH: 6.0-7.5' S-5

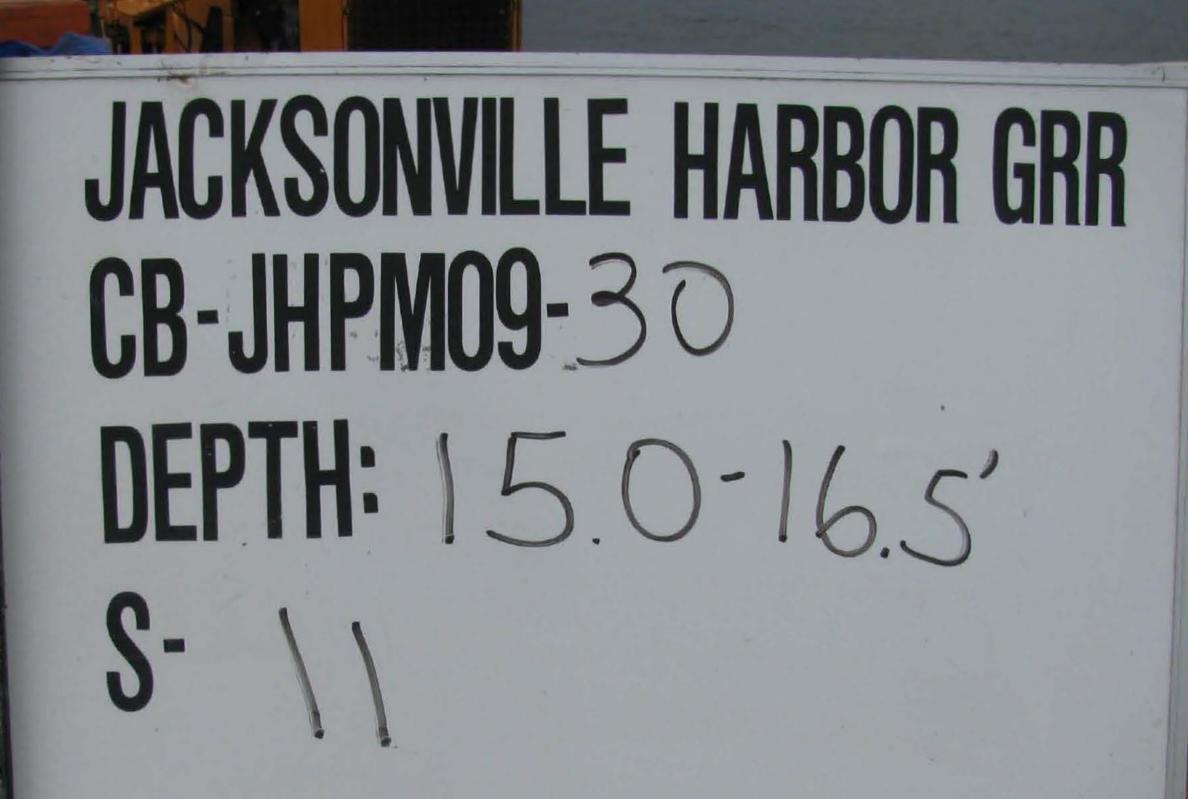
JACKSONVILLE HARBOR GRR CB-JHPM09-30 DEPTH: 7.5-9.0' S-6

JACKSONVILLE HARBOR GRR CB-JHPM09-30 DEPTH: 9.0'-10.5' S-7



JACKSONVILLE HARBOR GRR CB-JHPM09-30 DEPTH: 12.0-13.5 5-9

JACKSONVILLE HARBOR GRR CB-JHPM09-30 DEPTH: 13.5-15.0 S-10

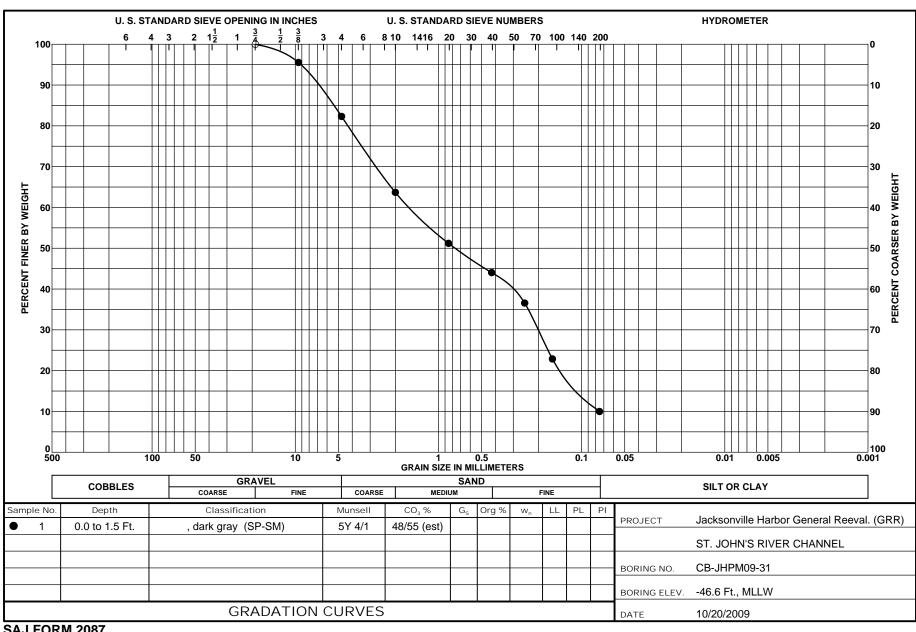


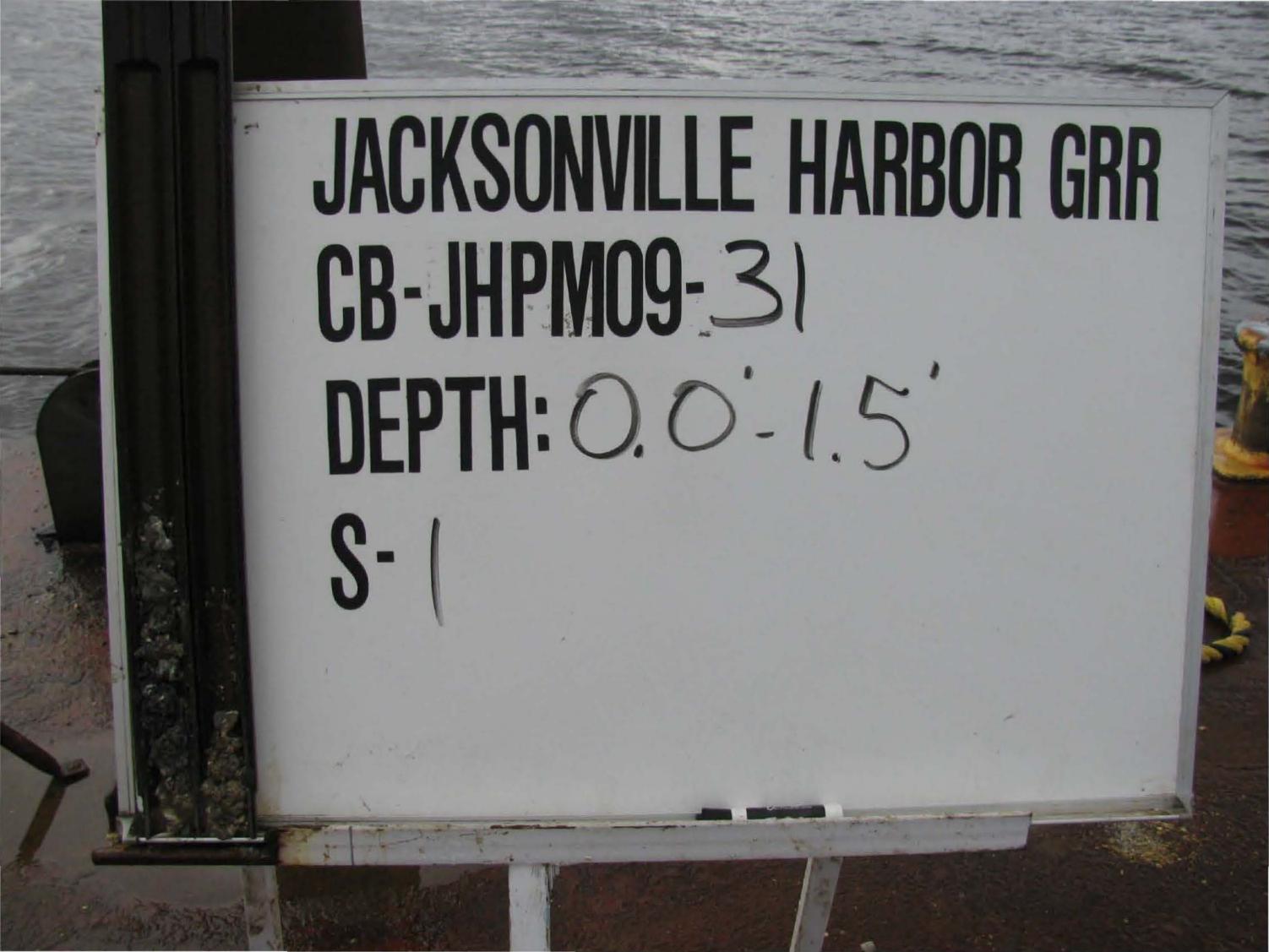
TEST CORE BORING NUMBER "CB-JHPM09-31"

gINT Boring Log Laboratory Curves Sample Photographs

	г	DIVICION	144CT:			ig Designation CB-JHPMOS		
DRILLING	GLOG	South Atlantic	INSTA Jac			vistrict	SHEET 1 OF 2 SHI	EETS
1. PROJECT			_			E OF BIT See Remarks	, _ 3/11	
Jacksonvi	lle Harbor G	General Reevaluation Report (GRR)	10. C	OORD	INATE	SYSTEM/DATUM HORIZONTAL	VERTICAL	
ST. JOHN	I'S RIVER C	CHANNEL LOCATION COORDINATES	11 1			ne, FLE (U.S. Ft.) NAD83	MLLW	
2. BORING DESI CB-JHPM		X = 522,200 $Y = 2,206,760$	111. 1					
	Engineerin	contractor file no 2009D08). 12. T	OTAL	SAMP	DISTURBED L	JNDISTURBED 0	(UD)
4. NAME OF DRI			13. T	OTAL	NUME	BER CORE BOXES 1		
Marvin St		DEG. FROM BEARING	14. E	LEVAT	TION C	GROUND WATER TIDAL		
		VERTICAL	15. D	ATE B	ORING	STARTED 08-27-09	COMPLETED 08-27-09	
6. THICKNESS C	OF OVERBUR	rden N/A	16. E	LEVA	TION T	TOP OF BORING -46.6 Ft.		
7. DEPTH DRILL	ED INTO RO	CK N/A				VERY FOR BORING 79 %		
8. TOTAL DEPTH	H OF BORING	3 15.0 Ft.	18. S			AND TITLE OF INSPECTOR mpson III, Civil Engineer		
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	RÉC	BOX OR SAMPLE	ROD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-46.6 0.0						-46.6		
		AND, poorly-graded with silt, mostly				70.0	5	
ţ.	_ [∵]] me	ngular to subangular fine to edium-grained sand-sized quartz, some	67	1		SPT Sampler	4	
F		ngular to subangular shell up to 1", few si et, 5Y 4/1 dark gray (SP-SM)	lt,			' -48.1	5	9
ļ.	:-	5 dain g.a, (61 5111)			1	10.1	3	
<u> -</u>	-: <mark> </mark> ∖-At	t El48.6 Ft., some shell up to 2"	53	2		SPT Sampler	2	
ļ.	:: <u> </u>					-49.6	1	3
 -	 :. 				1	10.0	5	
ţ			53	3		SPT Sampler	4	
-51.1 4.5	 :- ∦					-51.1	3	7
- 4.5		HELL, mostly angular to subangular shell	-		1	01.1	2	
F	Per lin	o to 1", few angular to subangular ne-grained sand-sized quartz, wet,	40	4		SPT Sampler	2	
-52.6 6.0	5) 5) 5) 5)	Y 4/1 dark gray				-52.6	2	4
-	CI	LAY, lean, low plasticity, soft, moist,	-		1	02.0	NAD83 MLLW TION OF DRILL AUTO HAMMIN AMANUAL HAM MANUAL HA	
ļ.		ganic odor, 10Y 4/1 dark greenish gray CL)	100	5		SPT Sampler	1	
<u> </u>						-54.1	0	1
ļ.					1	<u> </u>	1	
F			80	6		SPT Sampler	2	
ļ.						-55.6	2	4
F					1		2	
ļ.			100	7		SPT Sampler	2	_
-57.1 10.5		t El56.6 Ft., little angular to subangular nell up to 1"				-57.1	2	4
-	CI	LAY, fat, medium plasticity, firm,	1		1		2	
F	dis	scontinue shell, moist, 10Y 4/1 dark reenish gray (CH)	100	8		SPT Sampler	3	_
ļ.	LAt	t El57.6 Ft., few wood debris				-58.6		7
<u> </u>					1		4	
ţ			100	9		SPT Sampler	3	
F						-60.1		6
ţ					1			
F			100	10		SPT Sampler		
61 6 - 15 0						·	5	11
-61.6 [15.0				1	<u> </u>	-61.6 (Continued)	<u> </u>	

ΠP	ILLING	1.00	G (Cont. Sheet)	INSTALLA				g Designation CB-JHPN	SHEET 2	
PROJE		LUC	J (Cont. Sheet)	Jackso COORDINA				TUM ! HORIZONTAL	OF 2 S	HEETS
		arbor (General Reevaluation Report (GRR)	State F					MLLW	
	ION COORD			<i>ELEVATIO</i> -46.6 F		OF E	BORIN	lG		
	522,200		,200,700	-40.6 F	l.	αщ	l		∑.	٩
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIA	LS	REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
	ORM 18		NOTES: 1. USACE Jacksonville is the custo these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 4" flush joint steel of the visual referenced at start of operations and referenced to the tide at the Mayport Bar Pilots Dock. 5. Water depth of -47.8 ft. recorded AM on 8/27/09. Tide gage reading of milw 6. Laboratory Testing Results SAMPLE SAMPLE LABORA ID DEPTH CLASSIFICATION DEPTH CLASSIFICATION DEPTH CLASSIFICATION Atterberg limits.	casing drilling al station at 09:15 of +1.2 ft. TORY CATION				140# hammer w/30" drop use 2.0' split spoon (1-3/8" I.D. x 3	ed with 2" O.D.).	1

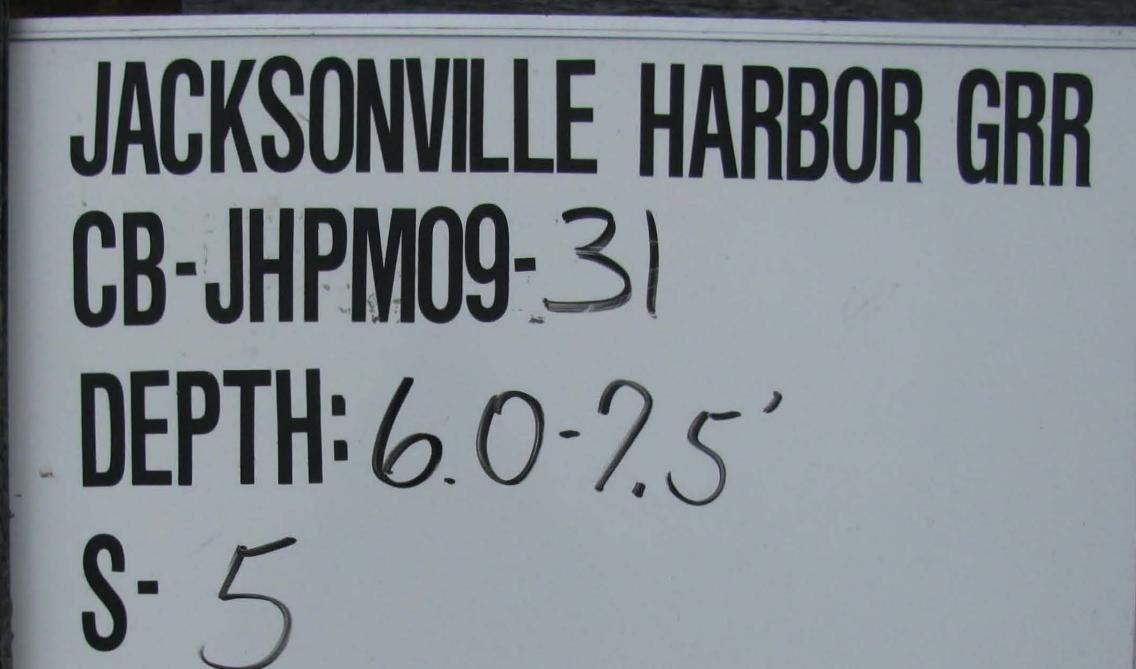




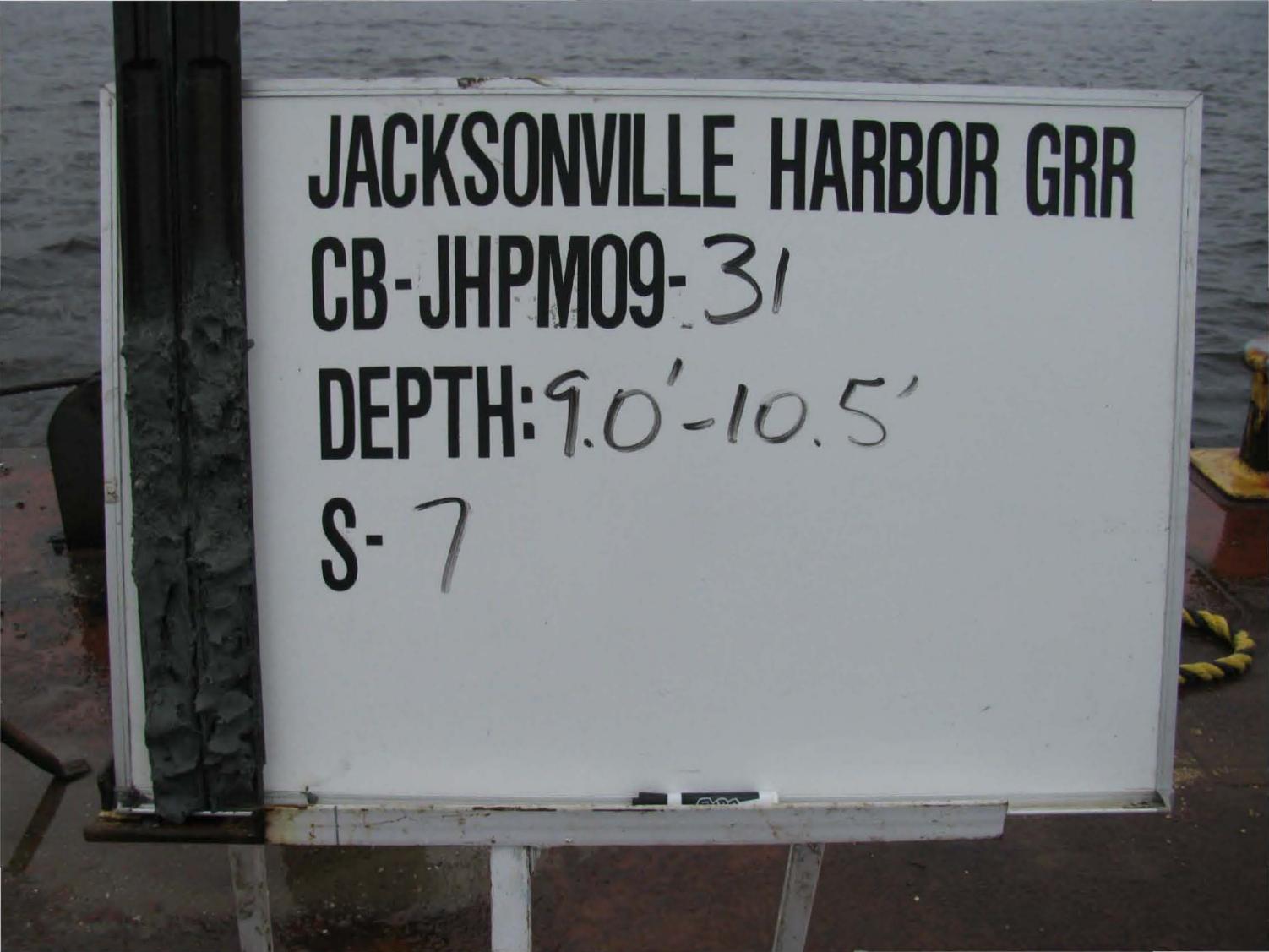
JACKSONVILLE HARBOR GRR CB-JHPM09-31 DEPTH: 1.5-30 S- 2

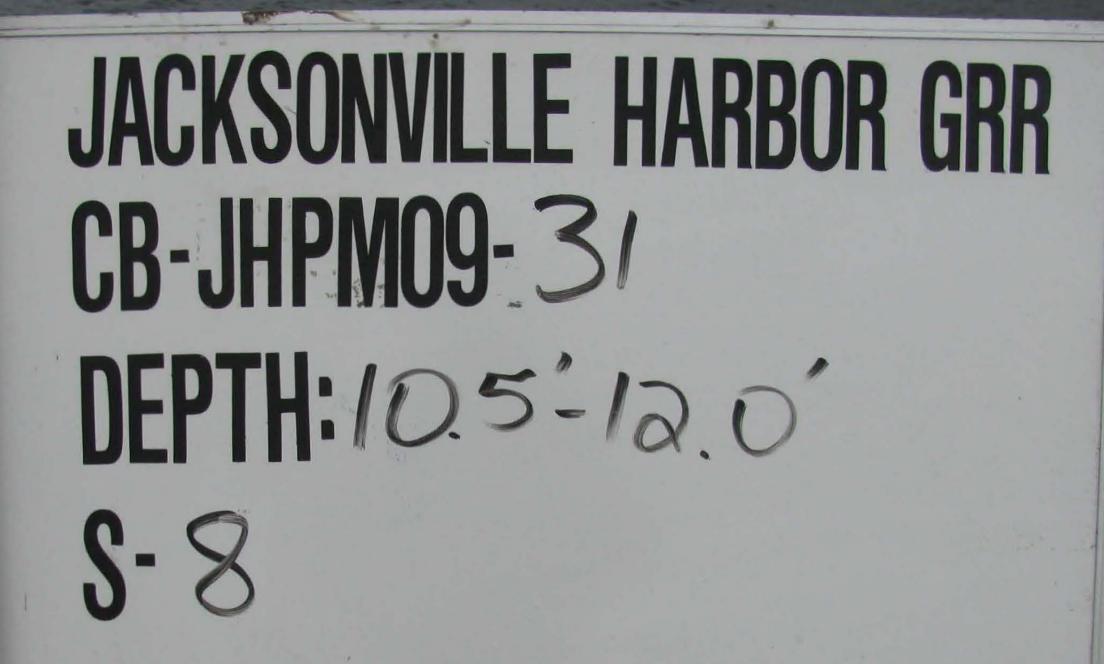
JACKSONVILLE HARBOR GRR CB-JHPM09-31 DEPTH: 3.0-4.5 S-3

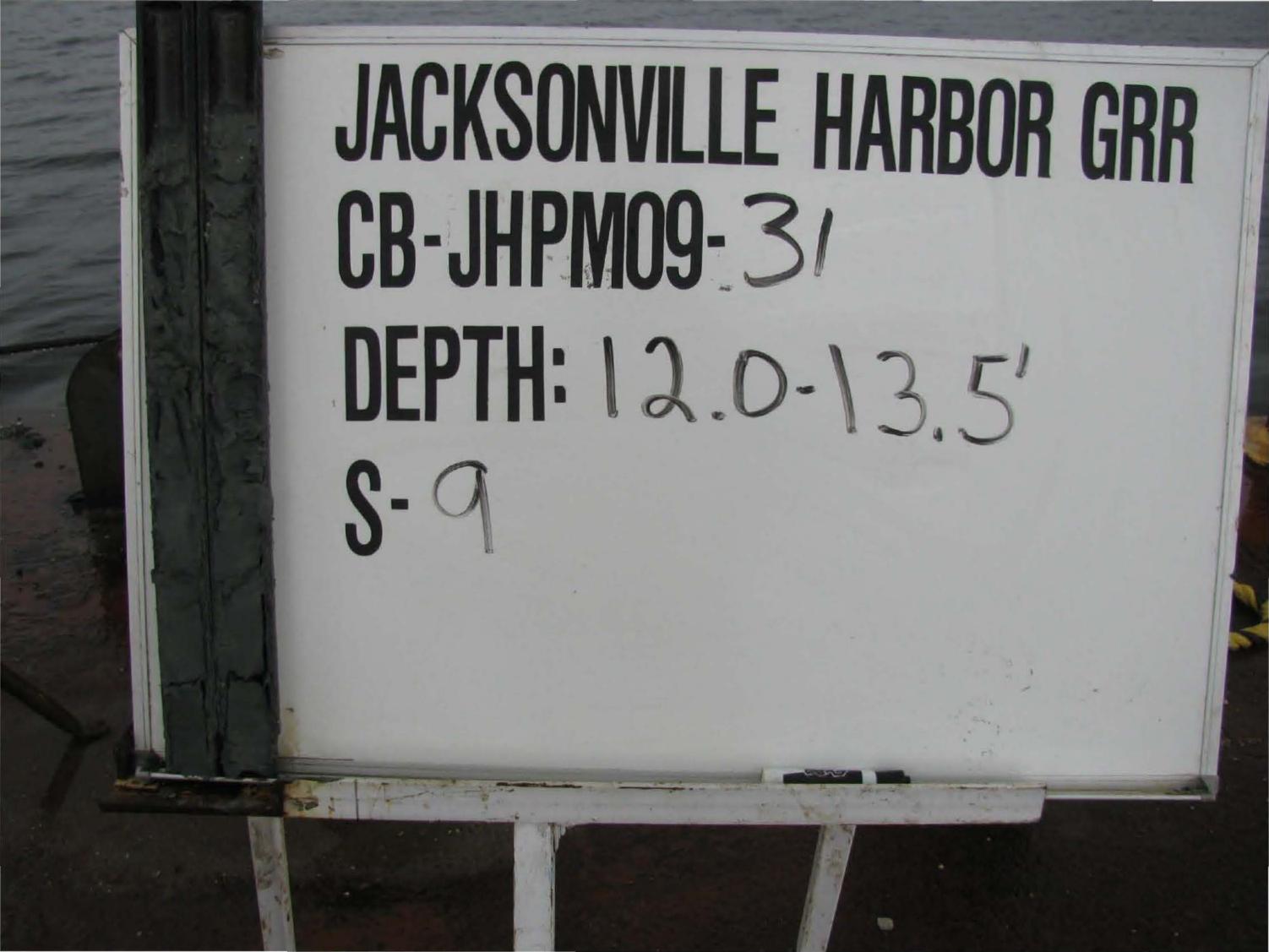
JACKSONVILLE HARBOR GRR CB-JHPM09-31 DEPTH: 45-60

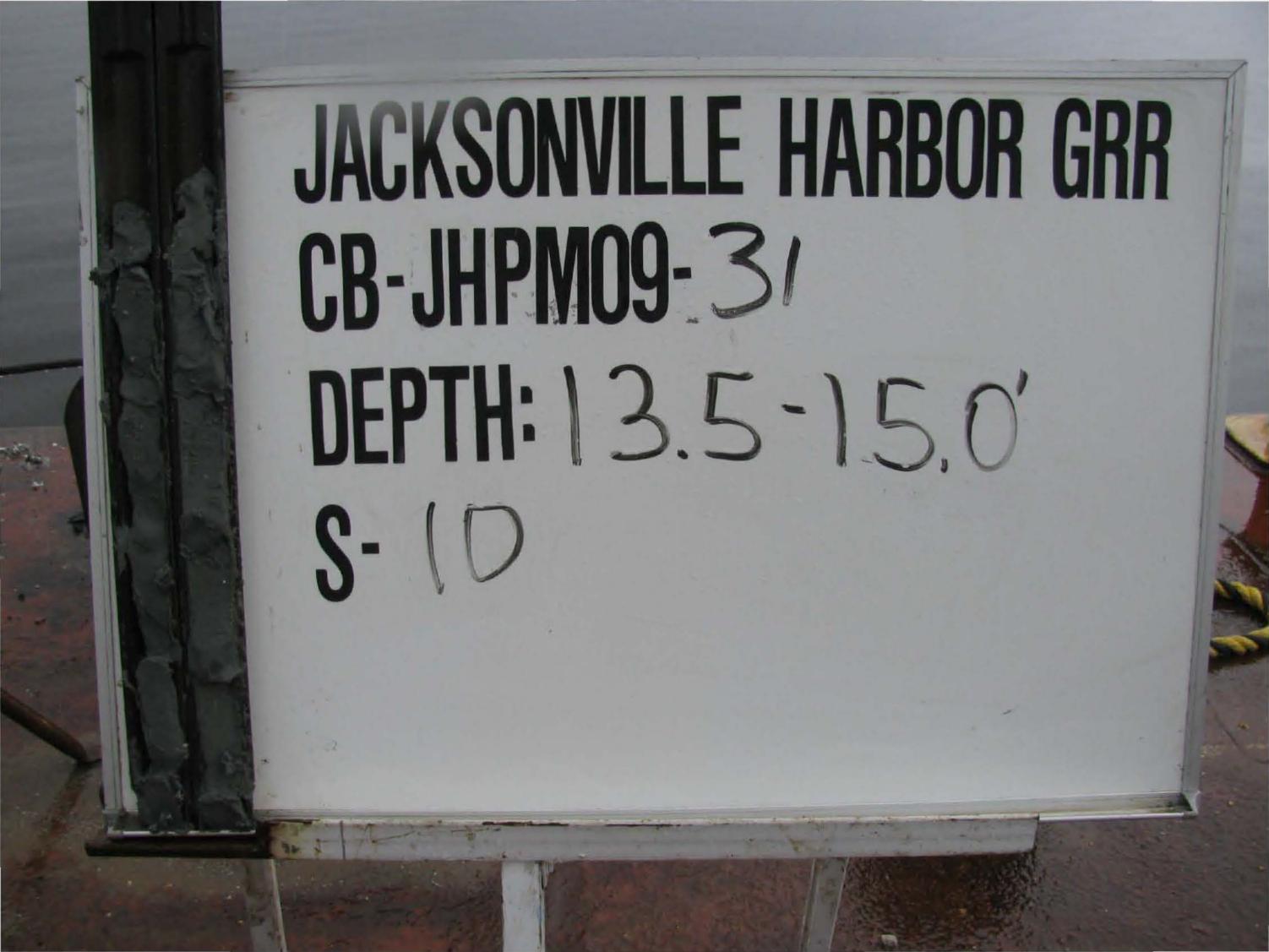


JACKSONVILLE HARBOR GRR CB-JHPM09-31 DEPTH: 7.5-9.0' S- 6







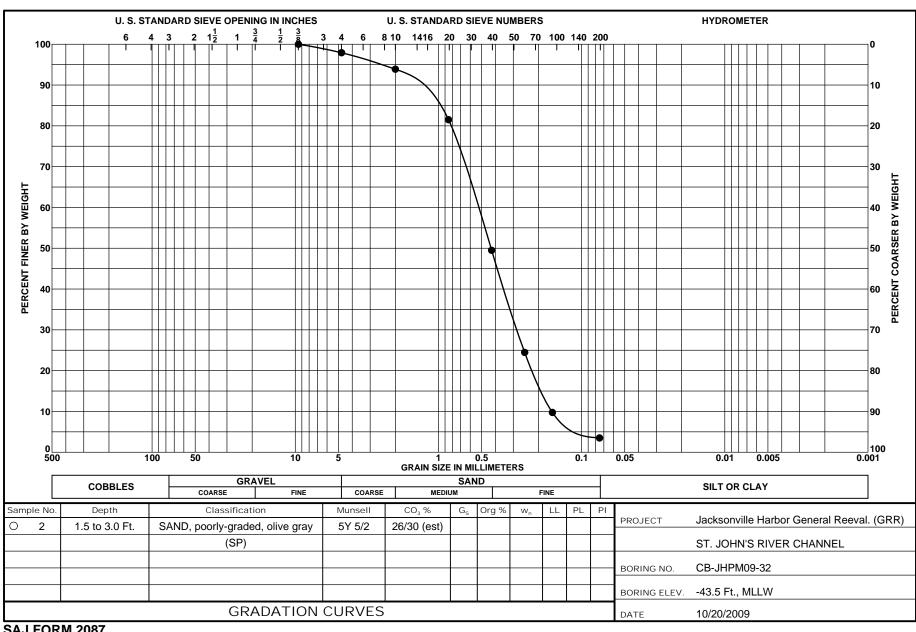


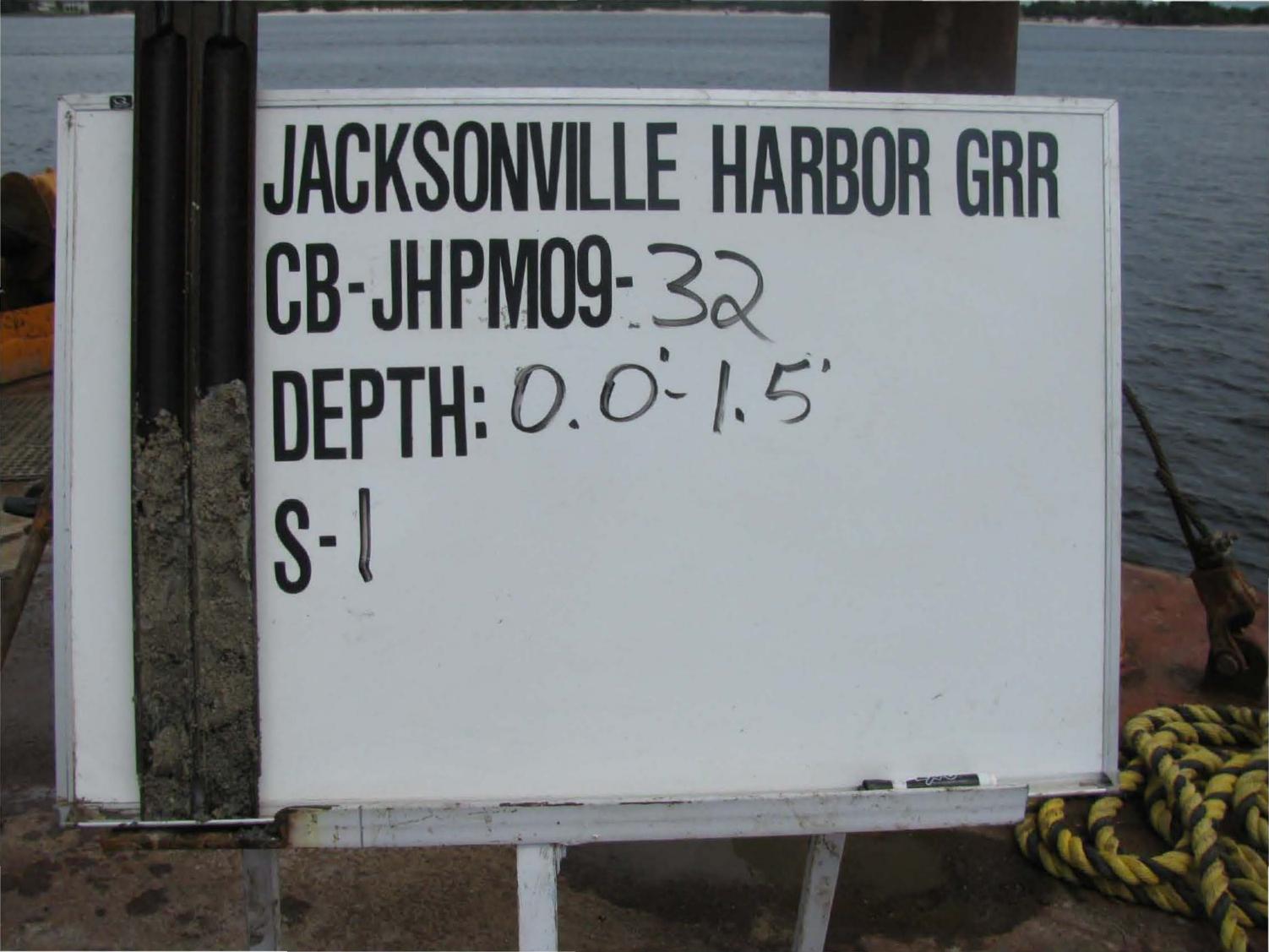
TEST CORE BORING NUMBER "CB-JHPM09-32"

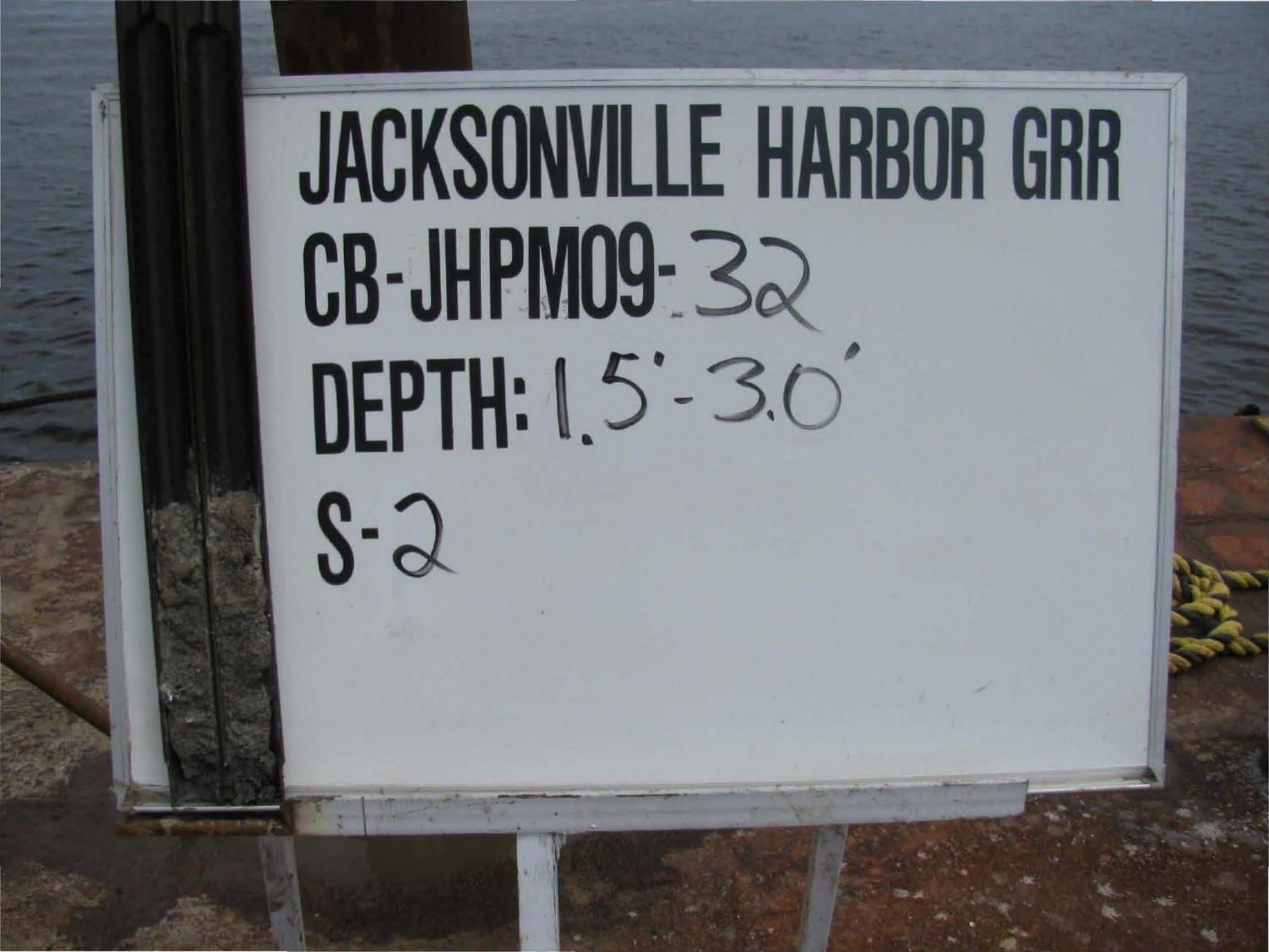
gINT Boring Log Laboratory Curves Sample Photographs

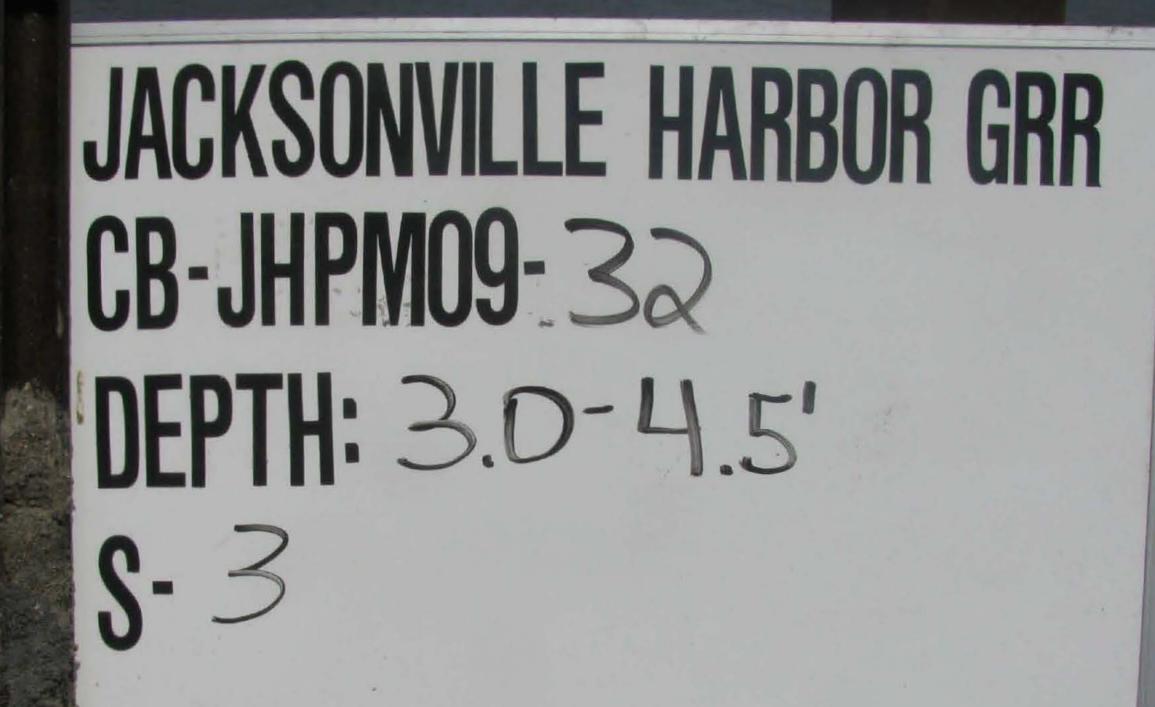
Louvelou	1 ,,	VOT 4.			g Designation CB-JHPINC	
DRILLING LOG South Atlantic	"	V <i>STAL</i> lack			istrict	SHEET 1 OF 2 SHEETS
1. PROJECT	9.				E OF BIT See Remarks	1-: 2 3.7.227
Jacksonville Harbor General Reevaluation Report (GRR)	10	0. CC	ORDI	NATE	SYSTEM/DATUM HORIZONTAL	VERTICAL
ST. JOHN'S RIVER CHANNEL					ne, FLE (U.S. Ft.) NAD83	MLLW
2. BORING DESIGNATION LOCATION COORDINATES X = 524,075 Y = 2,206,					_	AUTO HAMMER MANUAL HAMMER
3. DRILLING AGENCY CONTRACTOR FILE	LE NO.				DISTURBED	UNDISTURBED (UD
Challenge Engineering & Testing, Inc. 2009D08	1.	2. TC	TAL :	SAIVIP	12	0
4. NAME OF DRILLER Marvin Strickland	1.	3. TC	TAL	NUME	BER CORE BOXES 1	
5. DIRECTION OF BORING DEG. FROM BEARING	1.	4. EL	EVAT	ION C	GROUND WATER TIDAL	
☑ VERTICAL ☐ INCLINED	1:	5. DA	TE B	ORING	STARTED 08-26-09	COMPLETED 08-26-09
6. THICKNESS OF OVERBURDEN N/A	1.	6 FI	ΕVΔT	TON 7	**************************************	1 00-20-09
·					VERY FOR BORING 84 %	
7. DEPTH DRILLED INTO ROCK N/A					AND TITLE OF INSPECTOR	
B. TOTAL DEPTH OF BORING 18.0 Ft.			V. J.	Thor	npson III, Civil Engineer	
ELEV. DEPTH O CLASSIFICATION OF MATERIALS		REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT. N-VALUE
40.5					40.5	
-43.5 0.0 SAND, poorly-graded, mostly angular	to				-43.5	4
subangular fine to medium-grained sand-sized quartz, few angular to suba		67	1		SPT Sampler	
shell up to 3/4", wet, 5Y 5/2 olive gray	(SP)	0'	ı		·	-4 9
F E					-45.0	
F 1001			_		0.77.0	5
		67	2		SPT Sampler	 13
<u> </u>					-46.5	7
<u> </u>						10
-47.5 4.0 ::: CAND		80	3		SPT Sampler	17 31
SAND, poorly-graded with silt, mostly angular to subangular medium to					-48.0	14
coarse-grained sand-sized quartz, few discontinue shell, moist, 10Y 3/1 very	v silt, dark					5
greenish gray (SP-SM)	dank	87	4		SPT Sampler	11 23
E I∴HI					-49.5	12
<u> </u>						5
E Mili		100	5		SPT Sampler	6 20
F MH					-51.0	14
F Ŀijţ						2
F HI		67	6		SPT Sampler	3
F Pili	-52.5	-52.5	-52.5	2 5		
F EHI						9
F I∷III		80	7		SPT Sampler	12
F Hill					-54.0	17 29
‡ :· <u> </u>	-				5 110	10
F ::		87	8		SPT Sampler	16
<u> </u>					·	17 33
├ :					-55.5	5
<u> </u>		87	9		SPT Sampler	
F F:		"	9		·	25 35
F :·		\vdash			-57.0	
F [:]					007.0	15
F [:		87	10		SPT Sampler	 51
⊢ I • †		1		l	-58.5	26

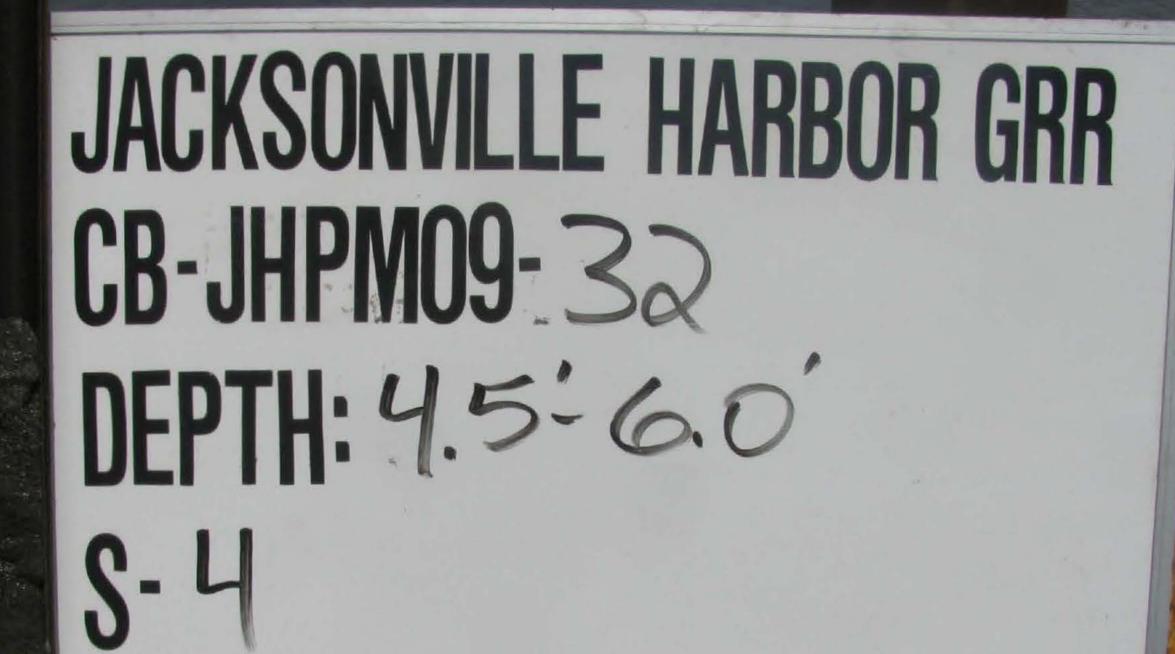
DRILLING LOG (Cont. Sheet) Jacksonville District Jacksonville Harbor General Reevaluation Report (GRR) CORRINATE SYSTEMMATUM NADR3 MILLW	
Jacksonville Harbor General Reevaluation Report (GRR) State Plane, FLE (U.S. Ft.) NAD83 MILW COLORDINATES CLASSIFICATION OF MATERIALS LABORATORY Laboratory Testing Results SAMPLE SAMPLE SAMPLE LABORATORY Laboratory Testing Results SAMPLE SAMPLE LABORATORY Laboratory Testing Results SAMPLE SAMPLE LABORATORY Laboratory Testing Results Laboratory Testing Results Laboratory Lab visual classification based on gradation State Plane, FLE (U.S. Ft.) NAD83 MILW	2
X = 524,075 Y = 2,206,438	
CLASSIFICATION OF MATERIALS REC. REC.	
100 11 SPT Sampler 12 21 40 40 11 SPT Sampler 21 22 40 40 40 40 40 40 40 40 40 40 40 40 40	4
100 11 SPT Sampler 21 22 4 100 12 SPT Sampler 21 17 21 18.0 NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 4" flush joint steel casing 4. Water depth of -46.5 ft. recorded at start of drilling operations and referenced to the tidal station at the Mayport Bar Pilots Dock. 5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. mllw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	4
-61.5 18.0	
-61.5 18.0 NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 4" flush joint steel casing 4. Water depth recorded at start of drilling operations and referenced to the tidal station at the Mayport Bar Pilots Dock. 5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. millw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	ιŁ
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-61.5 18.0 NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 4" flush joint steel casing 4. Water depth recorded at start of drilling operations and referenced to the tidal station at the Mayport Bar Pilots Dock. 5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. mllw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	L
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accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 4" flush joint steel casing 4. Water depth recorded at start of drilling operations and referenced to the tidal station at the Mayport Bar Pilots Dock. 5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. mllw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION	Ė
3. Set 55.5 ft. of 4" flush joint steel casing 4. Water depth recorded at start of drilling operations and referenced to the tidal station at the Mayport Bar Pilots Dock. 5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. mllw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	- -2 -
operations and referenced to the tidal station at the Mayport Bar Pilots Dock. 5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. mllw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	F
5. Water depth of -46.5 ft. recorded at 11:05 AM on 8/26/09. Tide gage reading of +3.0 ft. mllw 6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION	-
6. Laboratory Testing Results SAMPLE SAMPLE LABORATORY ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	<u>-</u>
ID DEPTH CLASSIFICATION 2 1.5/3.0 SP* *Lab visual classification based on gradation	-
*Lab visual classification based on gradation	- - -2
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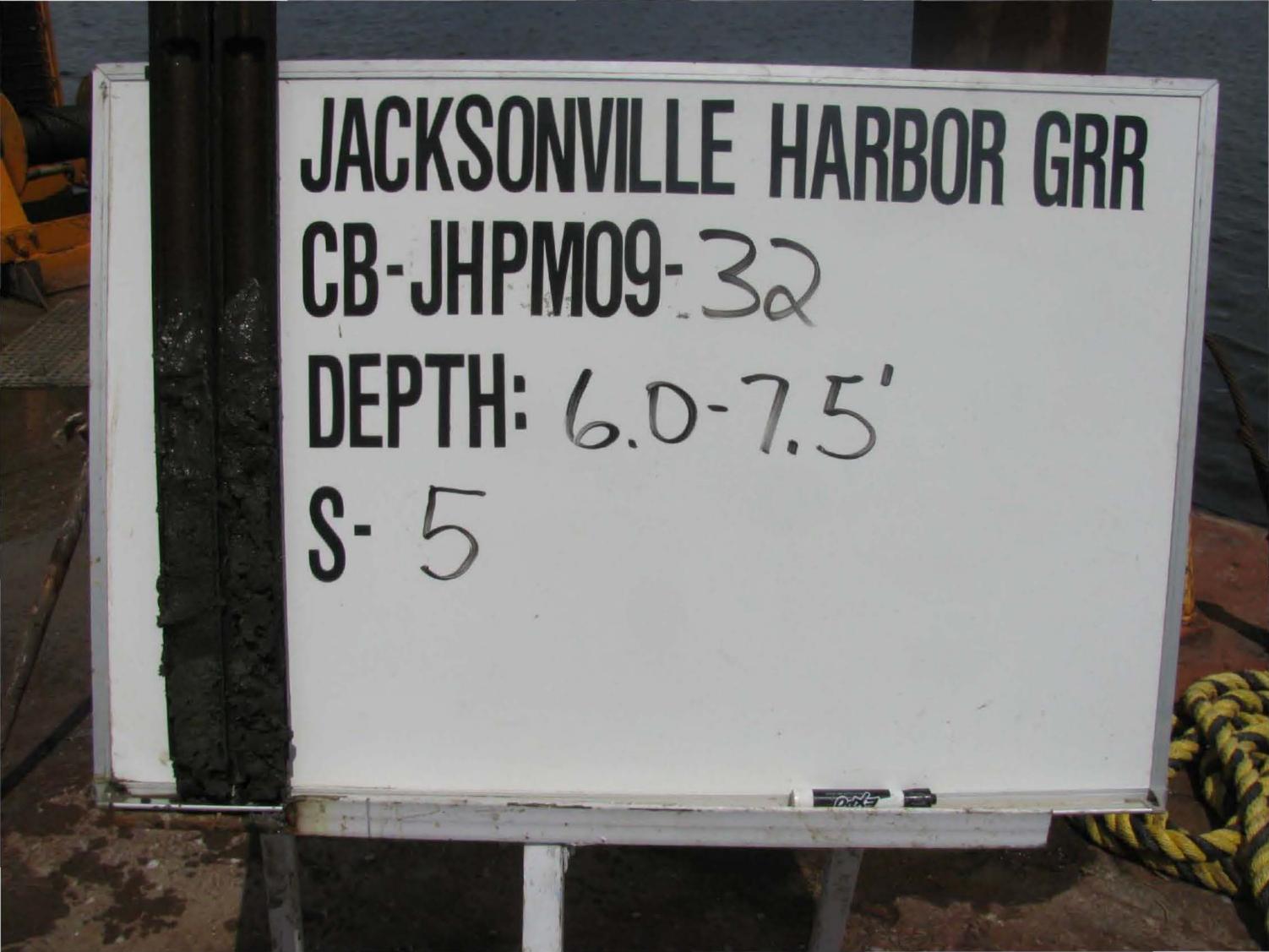


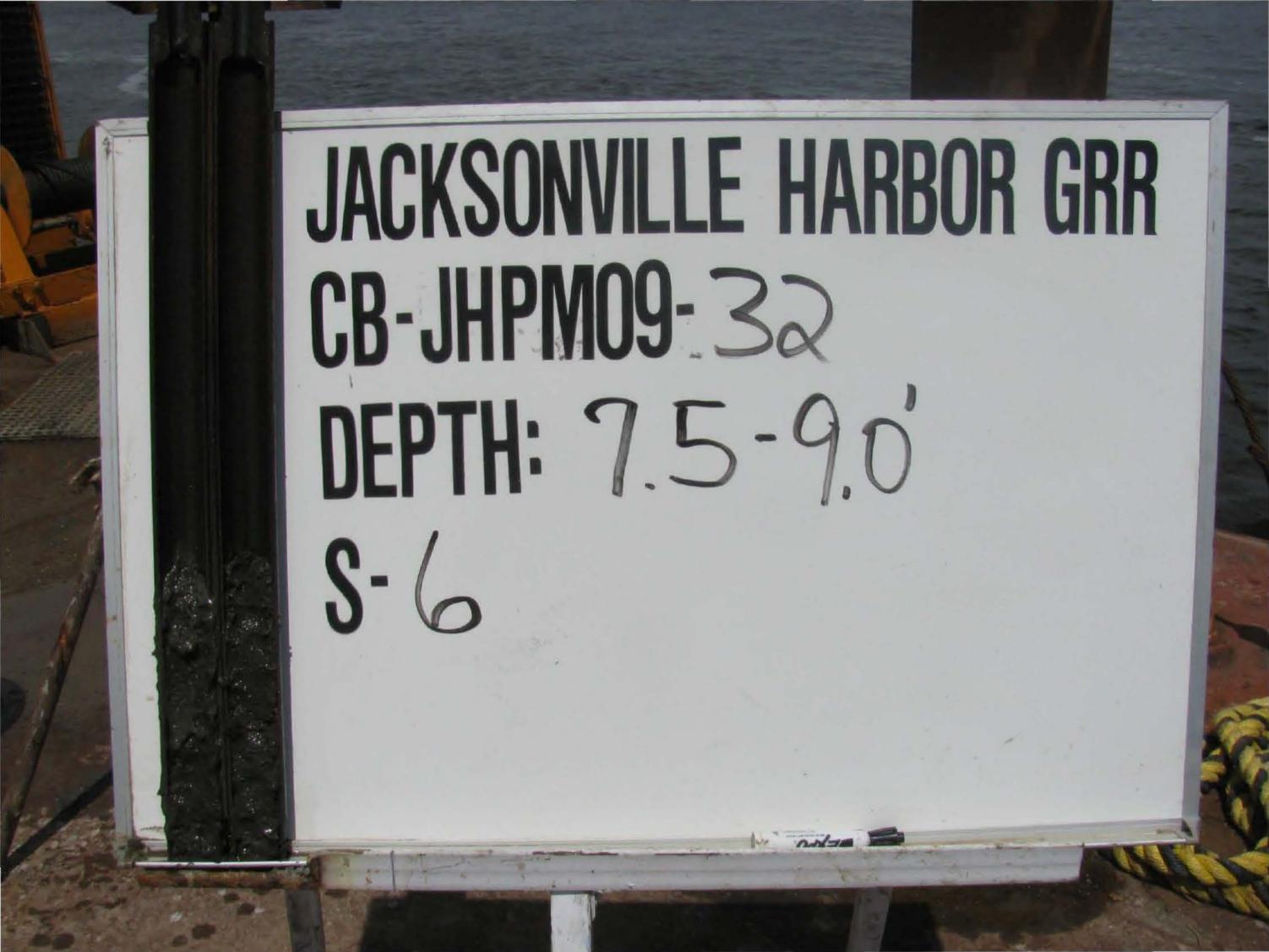


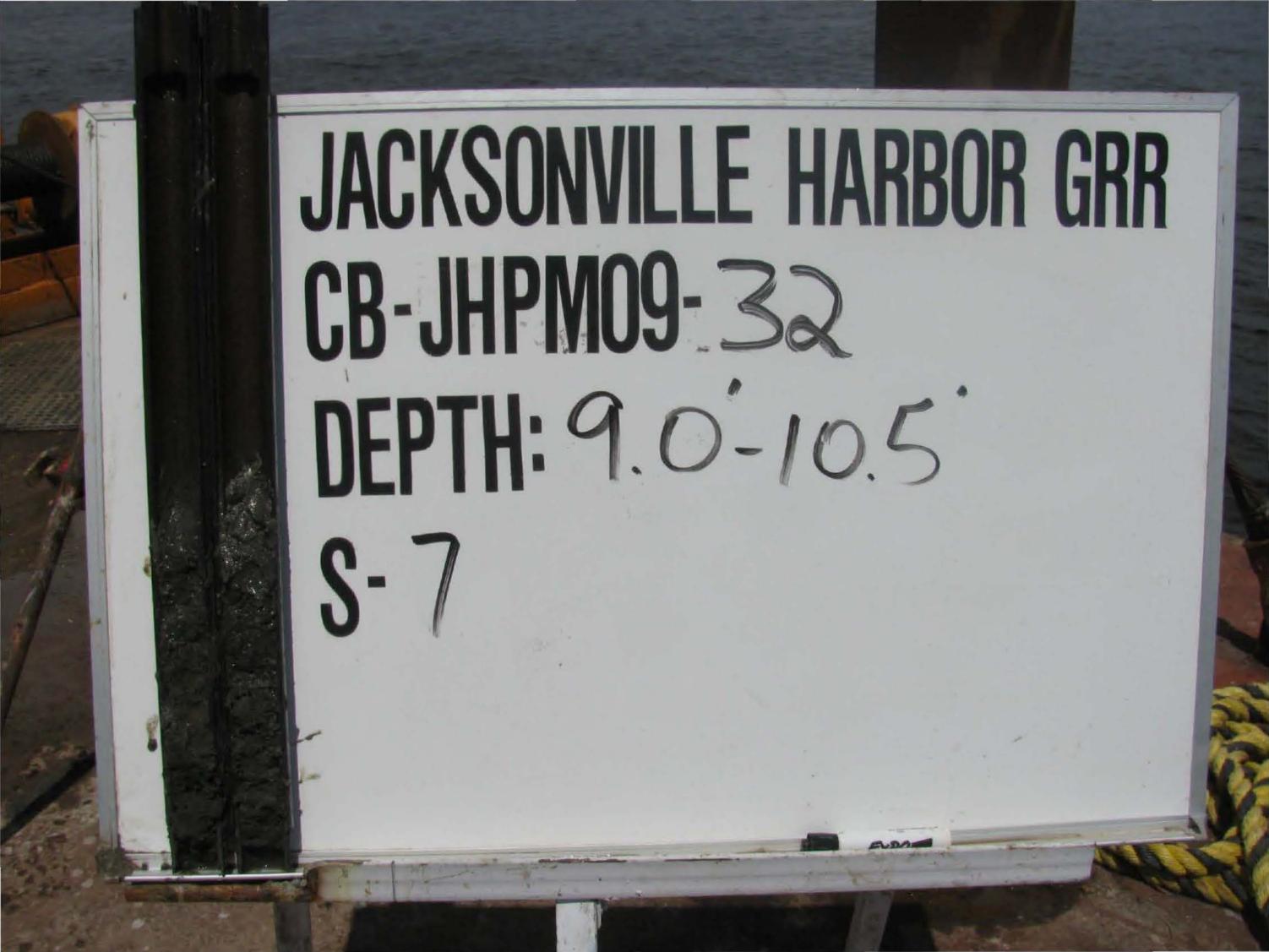


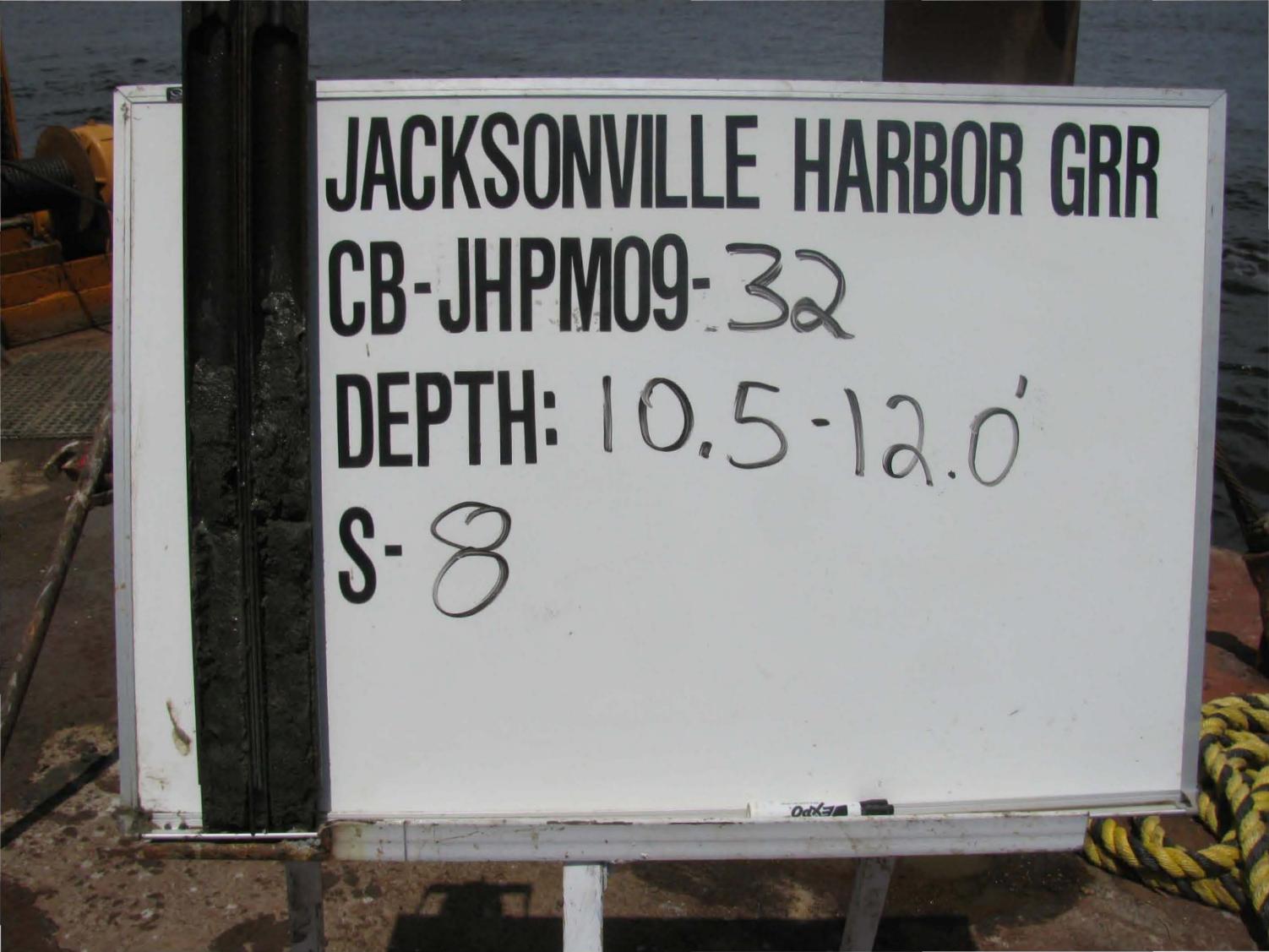


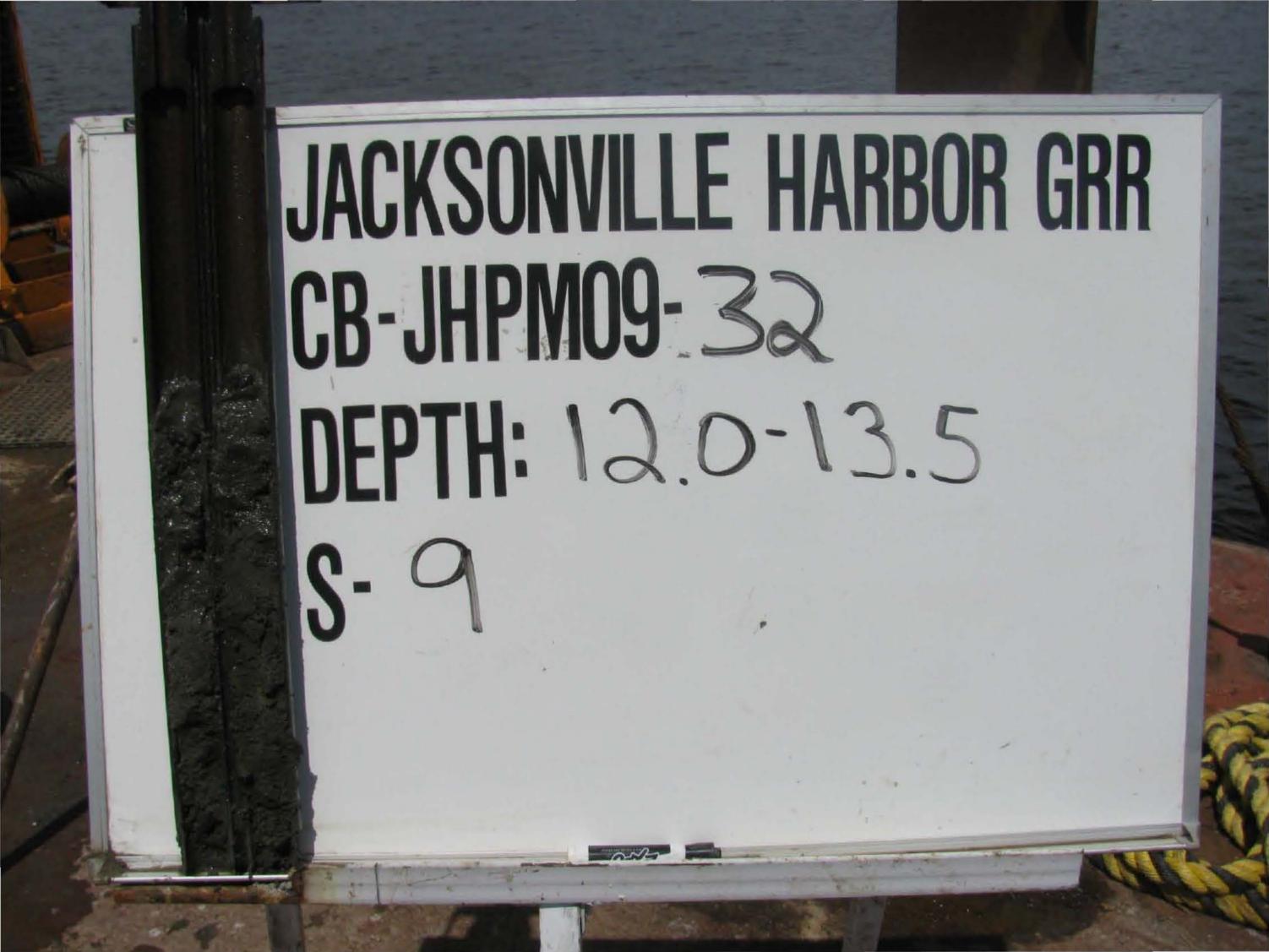




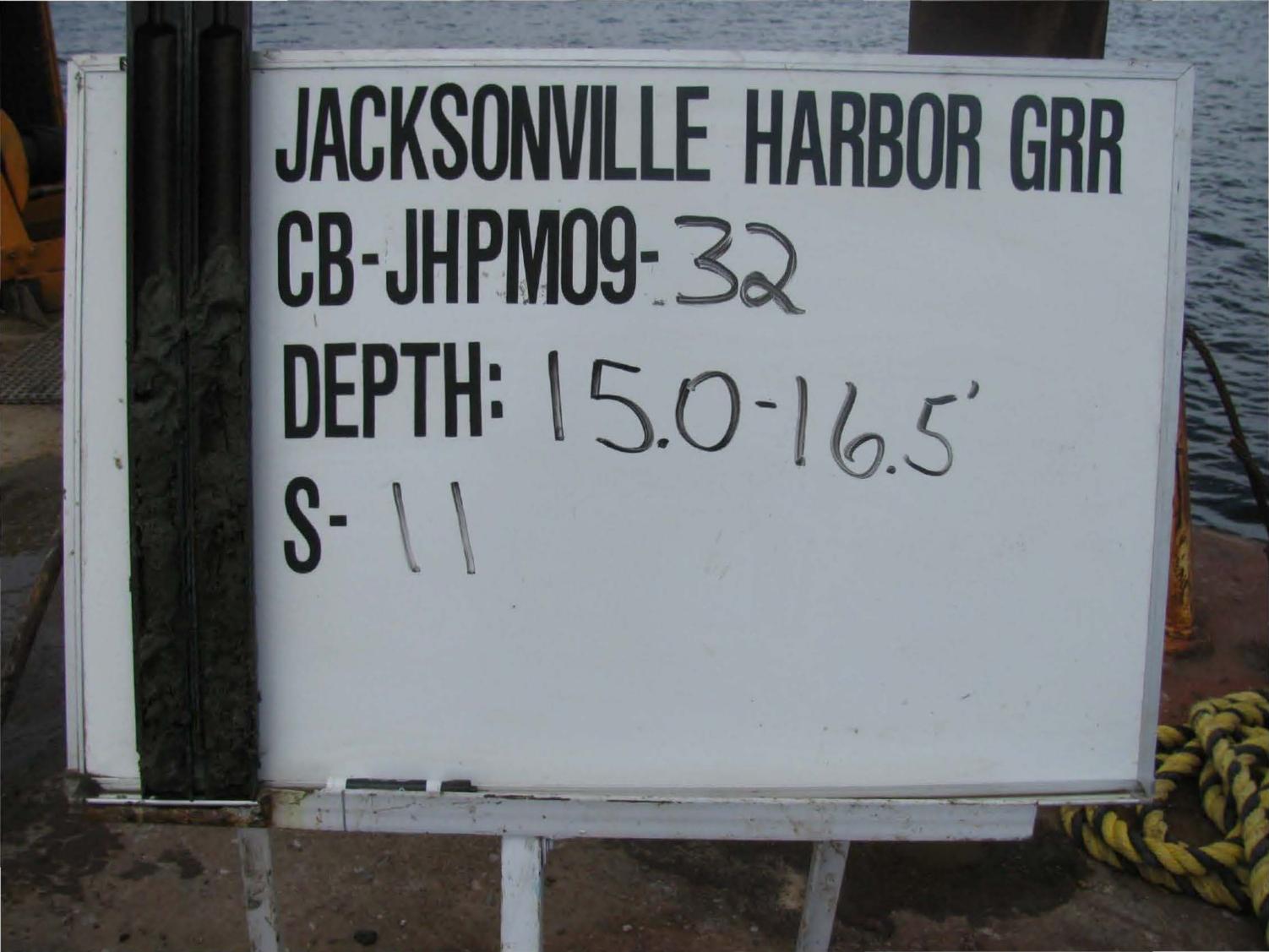


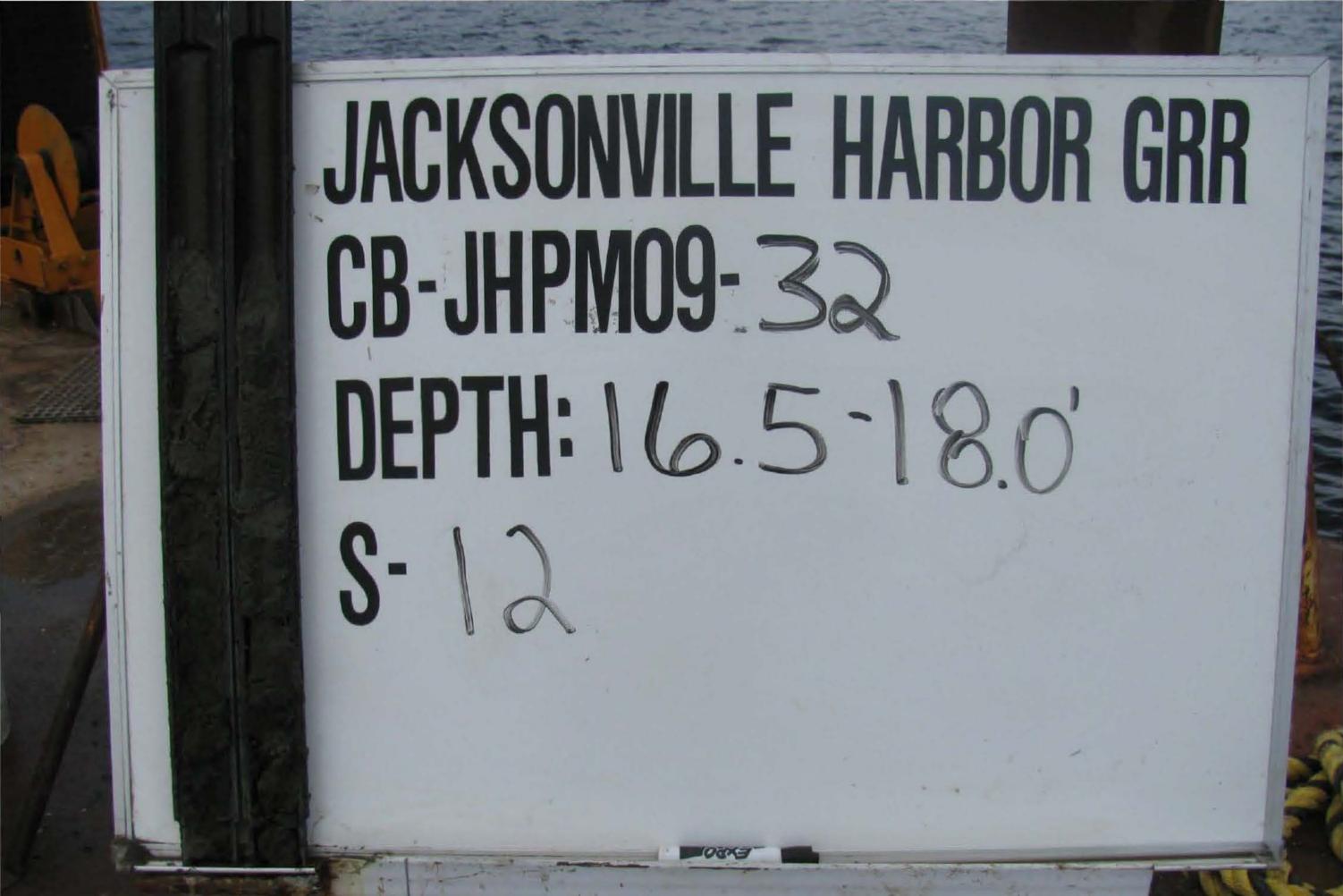






JACKSONVILLE HARBOR GRR CB-JHPM09-32 DEPTH: 13.5-15.0 S-10



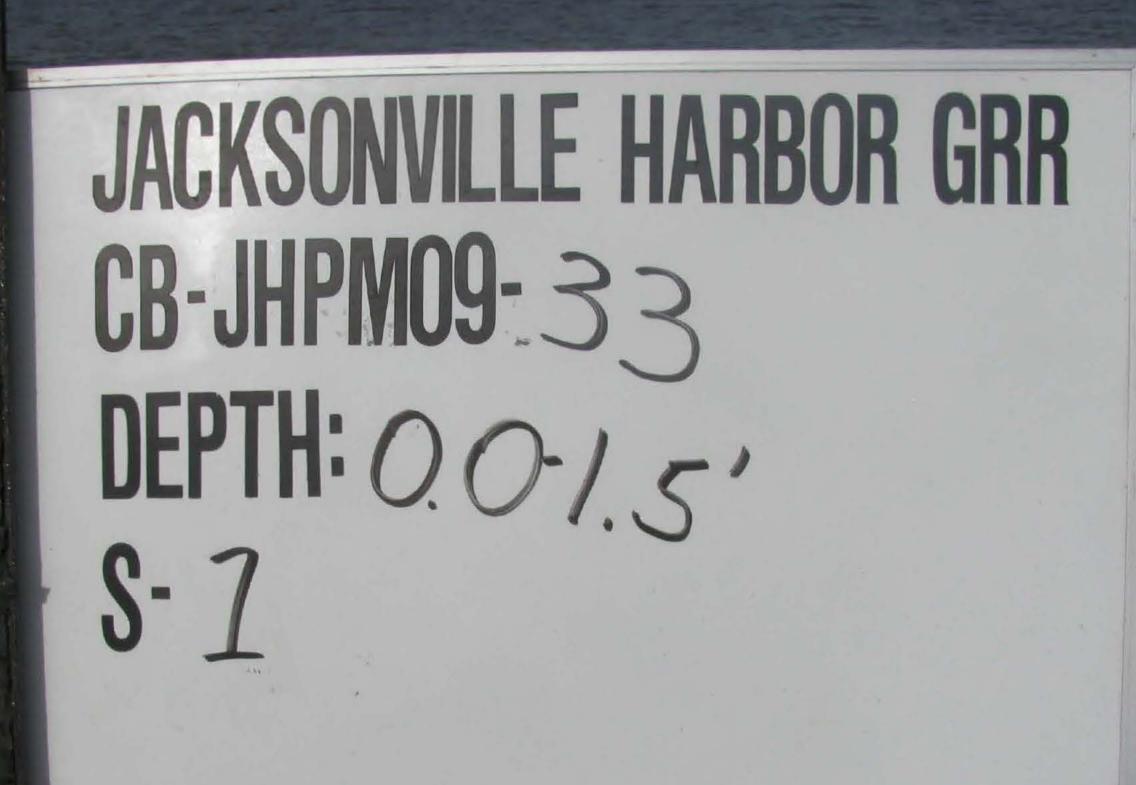


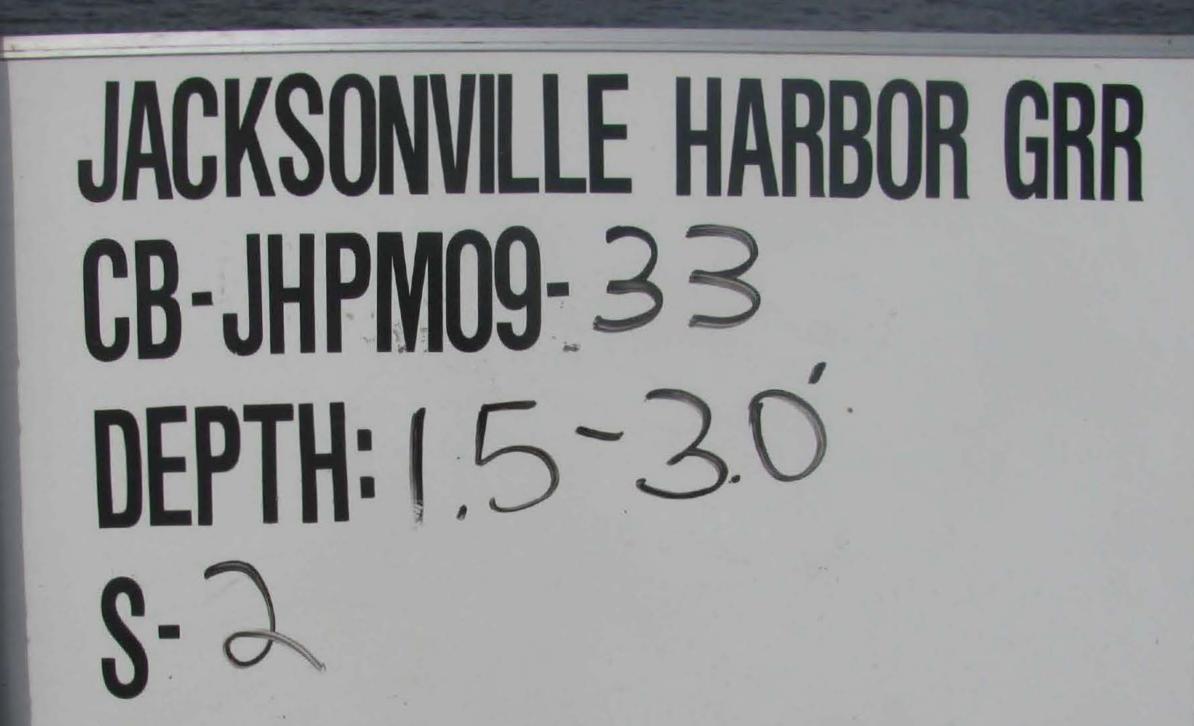
TEST CORE BORING NUMBER "CB-JHPM09-33"

gINT Boring Log Laboratory Curves Sample Photographs

Lauren					g Designation CB-JHPM09-3				
DRILLING LOG South Atlantic	- 1	INSTALLATION Jacksonville District SHEET 1 OF 2 SHEETS							
. PROJECT	_	9. SIZE AND TYPE OF BIT See Remarks					LLIJ		
Jacksonville Harbor General Reevaluation Report (GRR)	10.	СО	ORD	INATE		VERTICAL			
ST. JOHN'S RIVER CHANNEL	\bot				ne, FLE (U.S. Ft.) NAD83	MLLW			
BORING DESIGNATION LOCATION COORDINATES V 526 120 V 2 206 770	11.					TO HAMME			
CB-JHPM09-33 $X = 526,130$ $Y = 2,206,770$ DRILLING AGENCY CONTRACTOR FILE NO.	<i>9.</i>				DISTURBED UND	NUAL HAM DISTURBED			
Challenge Engineering & Testing, Inc. 2009D08				SAMP	8 0				
Marvin Strickland	-				BER CORE BOXES 2				
DIRECTION OF BORING DEG. FROM BEARING VERTICAL	14.	14. ELEVATION GROUND WATER TIDAL							
VERTICAL	15.	STARTED COMPLETED 15. DATE BORING 08-26-09 08-26-09							
THICKNESS OF OVERBURDEN N/A	16.	ELI	EVA7	TION 7	TOP OF BORING -49.2 Ft.		<u> </u>		
· · · · · · · · · · · · · · · · · · ·	_				VERY FOR BORING 92 %				
7. DEPTH DRILLED INTO ROCK N/A	18.	SIC	3NAT	URE A	AND TITLE OF INSPECTOR				
B. TOTAL DEPTH OF BORING 12.0 Ft.				Thor	npson III, Civil Engineer				
ELEV. DEPTH BY CLASSIFICATION OF MATERIALS	R	%C.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE		
40.2 0.0	T				40.2				
-49.2 0.0 CLAY, fat, medium plasticity, firm, few	\dashv	\dashv			-49.2	1			
angular to subangular shell up to 1/4", trac wood debris, wet, organic odor, 5Y 3/2 dar		100	1		SPT Sampler	1			
olive gray (CH)	" ['	100	1		,		3		
At El50.7 Ft., discontinue shell	F				-50.7	2			
						2			
	1	100	2		SPT Sampler	2	4		
	L	_			-52.2	2			
						3			
Ł 💋		93	3		SPT Sampler	2	4		
At El53.2 Ft., few wood debris					-53.7	2	4		
F //						2			
F 💋	1	100	4		SPT Sampler	2			
-55.2 6.0 At El54.7 Ft., 5Y 2.5/2 black					-55.2	2	4		
SAND, poorly-graded with silt, mostly					00.2	12			
angular to subangular fine-grained sand-sized quartz, few silt, wet, 5Y 5/2 oliv	re .	87	5		SPT Sampler	14			
gray (SP-SM)						17	31		
E 1:111	⊦	\dashv			56.7	13			
<u> </u>		87	6		SPT Sampler	13			
F [:: t]		٥,			,		27		
-58.2 9.0 •	-+				-58.2	14			
fine-grained sand-sized quartz, little silt, w						5			
- 5Y 4/2 olive gray (SM)		67	7		SPT Sampler	5	12		
	L				-59.7	7			
						12			
T	י [1	100	8		SPT Sampler	15	31		
-61.2 - 12.0				L	-61.2	16			
NOTES: 1. USACE Jacksonville is the custodian for these original files.	or				140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D				
2. Soils are field visually classified in accordance with the Unified Soils Classification System.									
A LEORM 1836				<u> </u>	(Continued)				

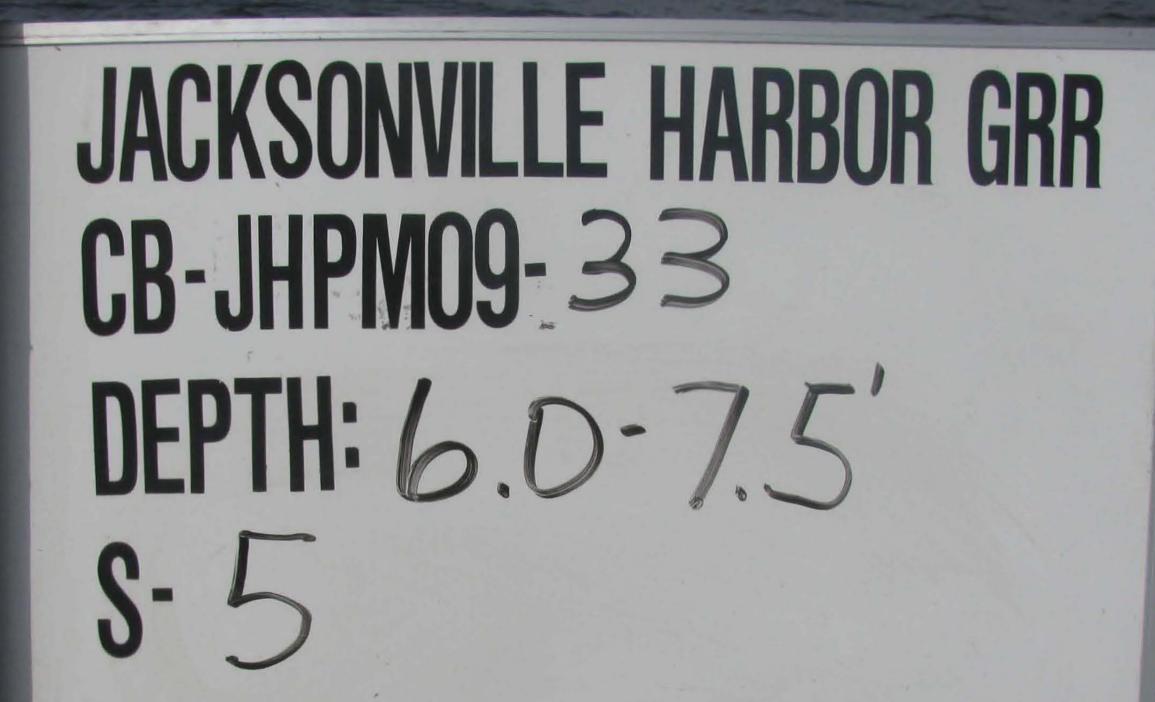
	11 1 1 1 1 1 1 1 1	1.00	Cont Chart	INSTALLA	TION		OHH	ng Designation CB-JHPI	SHEET 2	
		LUC	G (Cont. Sheet)	Jackso					OF 2 S	HEETS
PROJEC Jack		arbor (General Reevaluation Report (GRR)	COORDINA State F				•	VERTICAL MLLW	
	ION COORDI			ELEVATIO				•	•	
X =	526,130		,206,770	-49.2 F	t.			1		
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIA	LS	ĸEC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
			3. Set 60.5 ft. of 4" flush joint steel	casing						T -1
ELEV.	DEPTH	TEGE		casing drilling lal station	RÉC.	BOX (NOTE TO SECULATION OF THE PROPERTY OF THE PROP	REMARKS	BLOW BLOW	Te/y-N - 1 - 2 - 2 - 3
										3

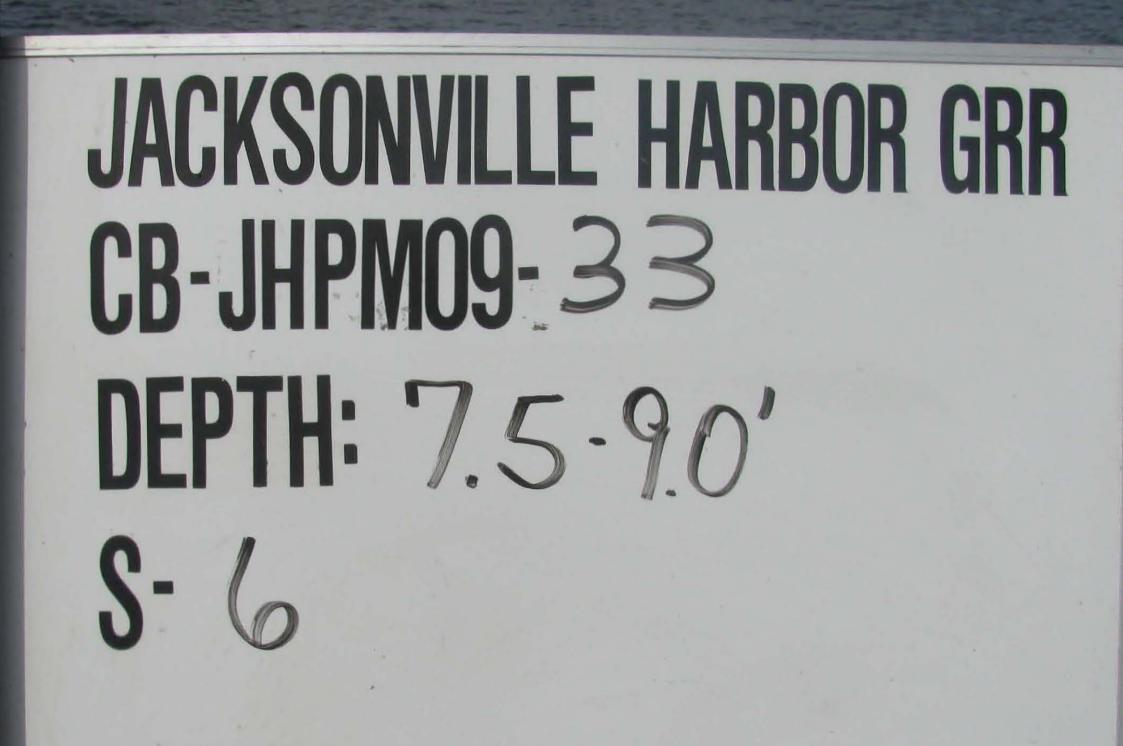




JACKSONVILLE HARBOR GRR CB-JHPM09-33 DEPTH: 3.0-4.51







JACKSONVILLE HARBOR GRR CB-JHPM09-33 DEPTH: 9.0-10.5' S- 7

JACKSONVILLE HARBOR GRR CB-JHPM09-33 DEPTH: 10.5-12.0 5-8

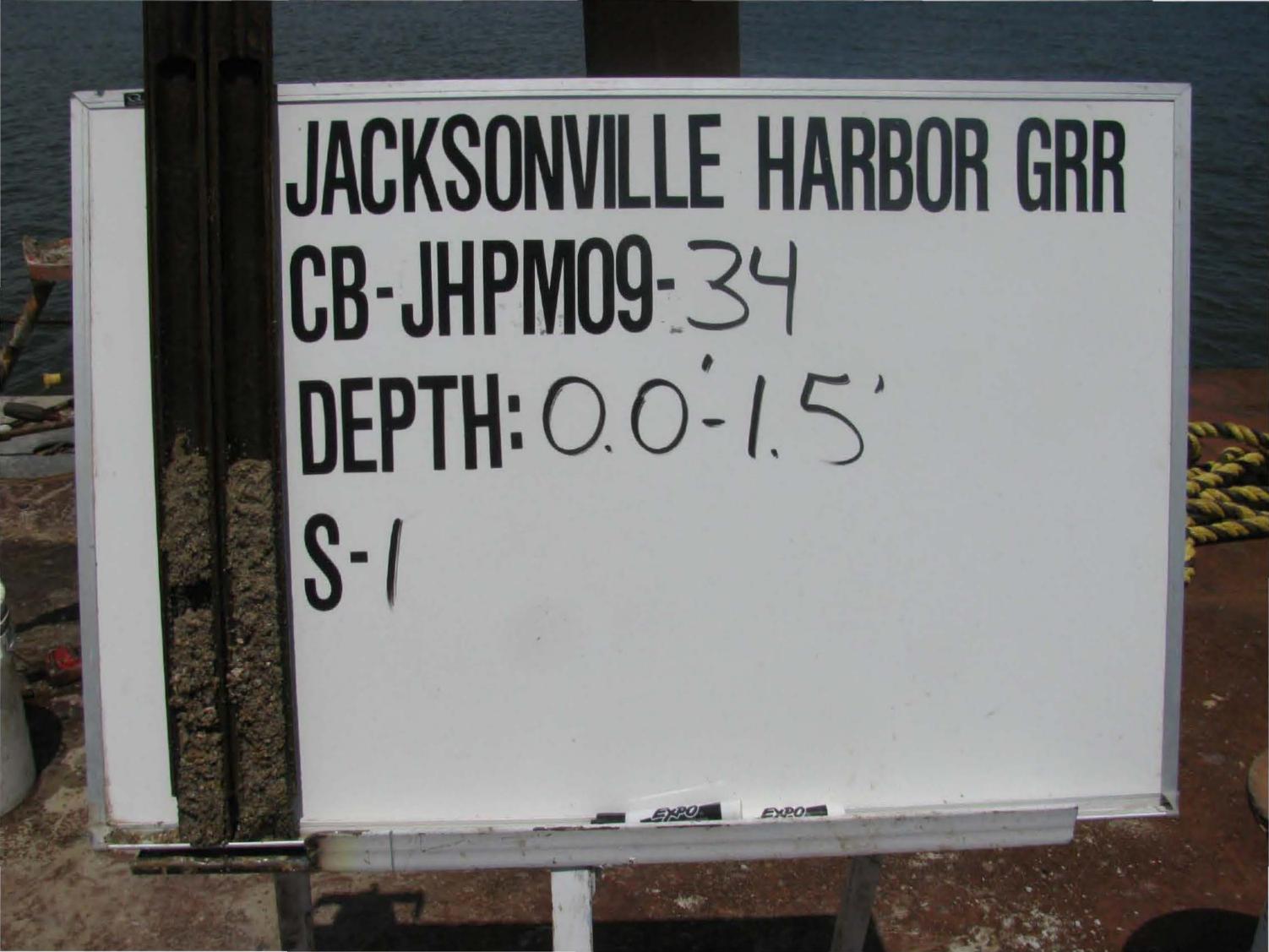
TEST CORE BORING NUMBER "CB-JHPM09-34"

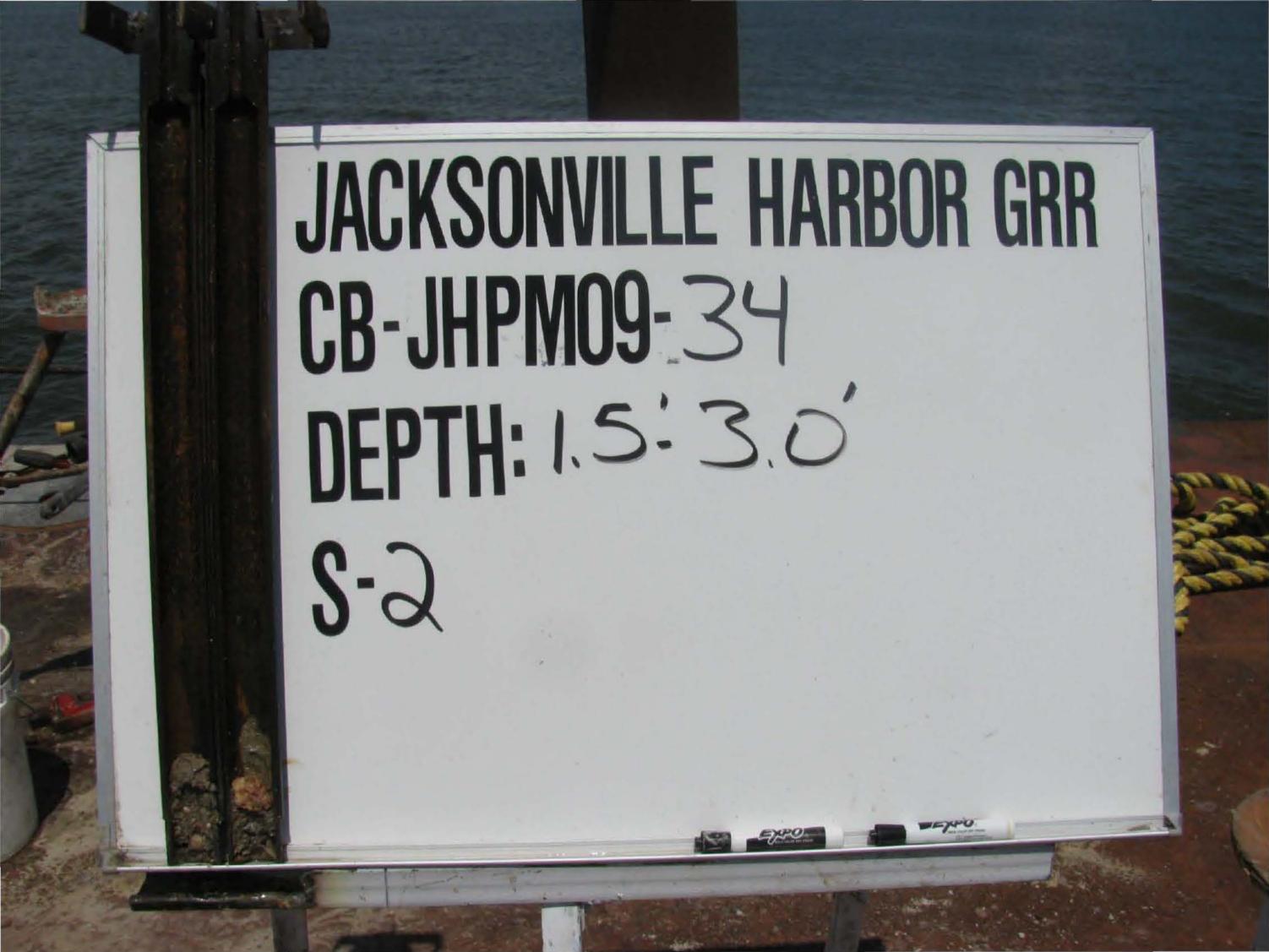
gINT Boring Log Laboratory Curves Sample Photographs

		I			ig Designation	CB-JULIMO:				
DRILLING LOG	South Atlantic	INSTAI Jac			istrict		SHEET 1 OF 2 SH	HFFTS		
1. PROJECT	Journ Adams	Jacksonville District OF 2 SHE 9. SIZE AND TYPE OF BIT See Remarks					13			
Jacksonville Harbor	General Reevaluation Report (GRR)	10. C	OORD	INATE		HORIZONTAL	VERTICAL			
ST. JOHN'S RIVER					ne, FLE (U.S. Ft.)	NAD83	MLLW			
l l		11. MANUFACTURER'S DESIGNATION OF DRILL AUTO HAMMER								
CB-JHPM09-34 3. DRILLING AGENCY	X = 527,920 $Y = 2,206,000$		Died	rich L	D-50 Truckrig		MANUAL HAN UNDISTURBED			
Challenge Engineering	1	12. To	OTAL .	SAMP	LES	13	0	(02)		
4. NAME OF DRILLER		13. To	OTAL I	NUME	BER CORE BOXES	1				
Marvin Strickland		14. El	EVA7	TION C	GROUND WATER	TIDAL				
5. DIRECTION OF BORING VERTICAL	DEG. FROM BEARING VERTICAL	STARTED COMPLETED								
☐ INCLINED		15. DATE BORING 08-25-09 08-25-09								
6. THICKNESS OF OVERBUR	RDEN N/A	16. El	EVA7	TION T	TOP OF BORING	-42.9 Ft.				
7. DEPTH DRILLED INTO RO	OCK N/A				VERY FOR BORING	77 %				
8. TOTAL DEPTH OF BORING	G 19.5 Ft.	18. SI			AND TITLE OF INSPE					
	9 19.01 t.	<u> </u>	_	I hor	npson III, Civil E I	ngineer		111		
ELEV. DEPTH ON SHORE THE S	CLASSIFICATION OF MATERIALS	ĸÉC	BOX OR SAMPLE	ROD OR UD		REMARKS	BLOWS/ 0.5 FT.	N-VALUE		
-42.9 0.0					-42.9					
S	HELL, mostly angular to subangular sand				- 4 2.3		3			
L P P P T to	gravel-sized shell up to 3/8", little angular subangular medium to coarse-grained	80	1			SPT Sampler	4			
⊢ 555 sa	and sized quertz wet EV 6/1 grov	100	Ι΄.				5	9		
-44.4 1.5 >>>> S	AND, poorly-graded, mostly angular to			1	-44.4					
	ubangular fine to medium-grained					SPT Sampler	8	.		
	and-sized quartz, some angular to ubangular shell up to 1", wet, 5Y 6/2 light live gray (SP)	20	2				12	28		
					-45.9		16			
<u> </u>							18	<u> </u>		
		67	3			SPT Sampler	20	44		
F I∷:I					-47.4		24	44		
F ∷:				1			12	-		
	At El47.9 Ft., few angular to subangular shell up to 1"		67	4			SPT Sampler	15	1	
					-48.9		18	33		
				1	-40.9		10			
E l∷l		-49.7 Ft., some angular to subangular	_			SPT Sampler	13	1 6		
	t El49.7 Ft., some angular to subangular hell up to 1/2"			12	25					
F ::: "	1011 dp 10 1/2		<u> </u>	-	-50.4					
F I∷k,	t El50.9 Ft., few angular to subangular						21	.		
	hell up to 3/8"	73	6			SPT Sampler	17	30		
-51.9 9.0	AND poorly are to death all	_ _	_		-51.9		13			
	AND, poorly-graded with silt, mostly ngular to subangular fine-grained						10	<u> </u>		
- [·][sa	and-sized quartz, some angular to	60	7			SPT Sampler	10	22		
	subangular shell up to 1/2", few silt, moist,				-53.4		12			
[:::. s	AND, poorly-graded, mostly angular to			1			13			
- [] fe	ubangular fine-grained sand-sized quartz, ew angular to subangular shell up to 1/8",	73	8			SPT Sampler	12	1		
	noist, 5Y 6/1 gray (SP)				54.0	,	11	23		
C	LAY, fat, medium plasticity, firm, moist,	\dashv	\vdash	1	-54.9		4			
	GY 4/1 dark greenish gray (CH)	00				CDT Camalan		∤		
		93	9			SPT Sampler	2	4		
			_	ł	-56.4		2			
							2	 		
		100	10			SPT Sampler	3	6		
					-57.9		3			
SALEORM 1836						(Continued)				

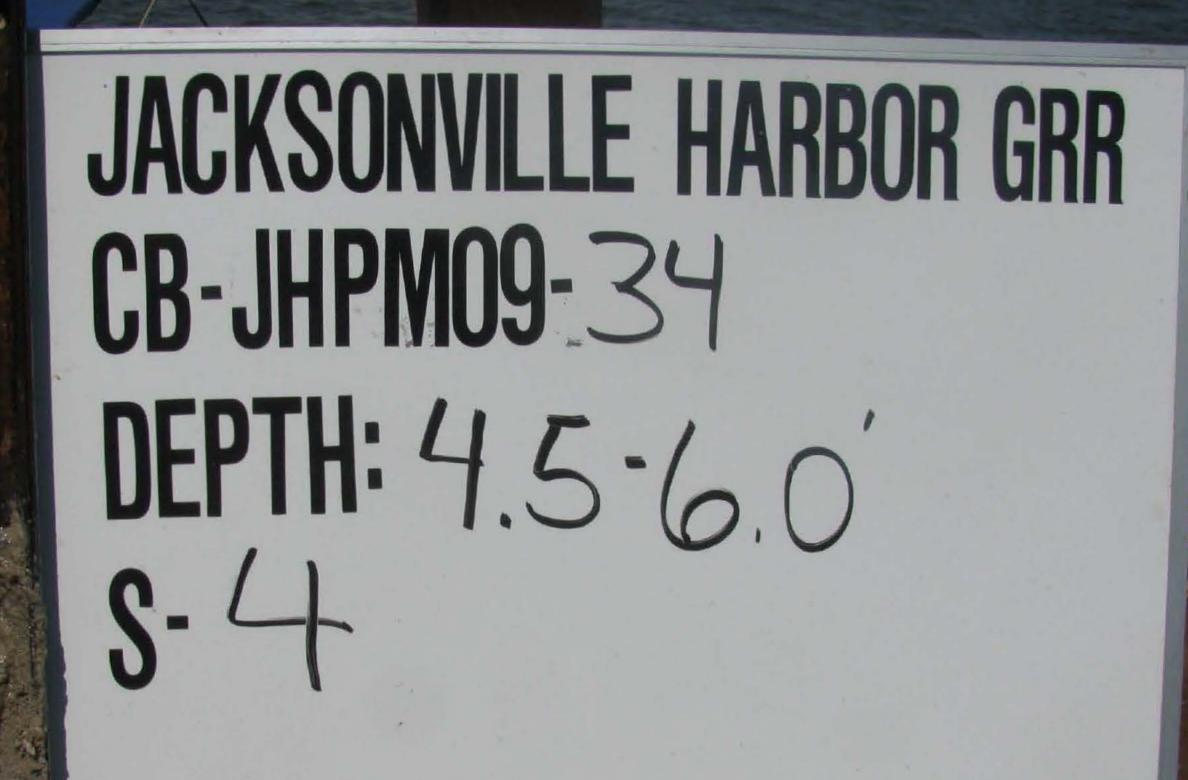
SAJ FORM 1836 JUN 02

DRILLING	LOC	G (Cont. Sheet)	INSTALLA Jackso		Distr	ict		SHEET 2 OF 2 SH	EETS
PROJECT			COORDINA					ERTICAL	
		General Reevaluation Report (GRR)	State F					MLLW	
X = 527,920		206,000	-42.9 F		OFE	BORIN	G		
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIA	ILS	ĸ. REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
				100			SPT Sampler	2 2 2	4
				100	12		SPT Sampler	1 2 2	4
-62.4 19.5				100	13		SPT Sampler -62.4	2 2 2	4
		NOTES: 1. USACE Jacksonville is the custo these original files. 2. Soils are field visually classified accordance with the Unified Soils Classification System. 3. Set 57.5 ft. of 4" flush joint steel 4. Water depth recorded at start of operations and referenced to the tid at the Mayport Bar Pilots Dock. 5. Water depth of -48.0 ft. recorded PM on 8/25/09. Tide gage reading of millw	casing drilling dal station				140# hammer w/30" drop used v 2.0' split spoon (1-3/8" I.D. x 2" (vith D.D.).	







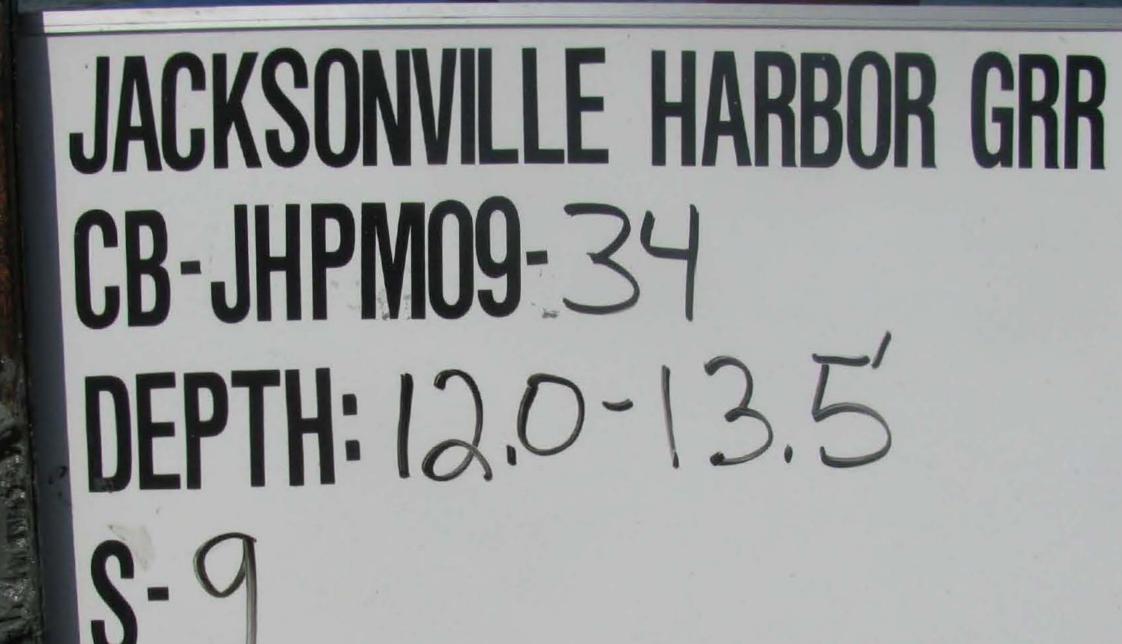


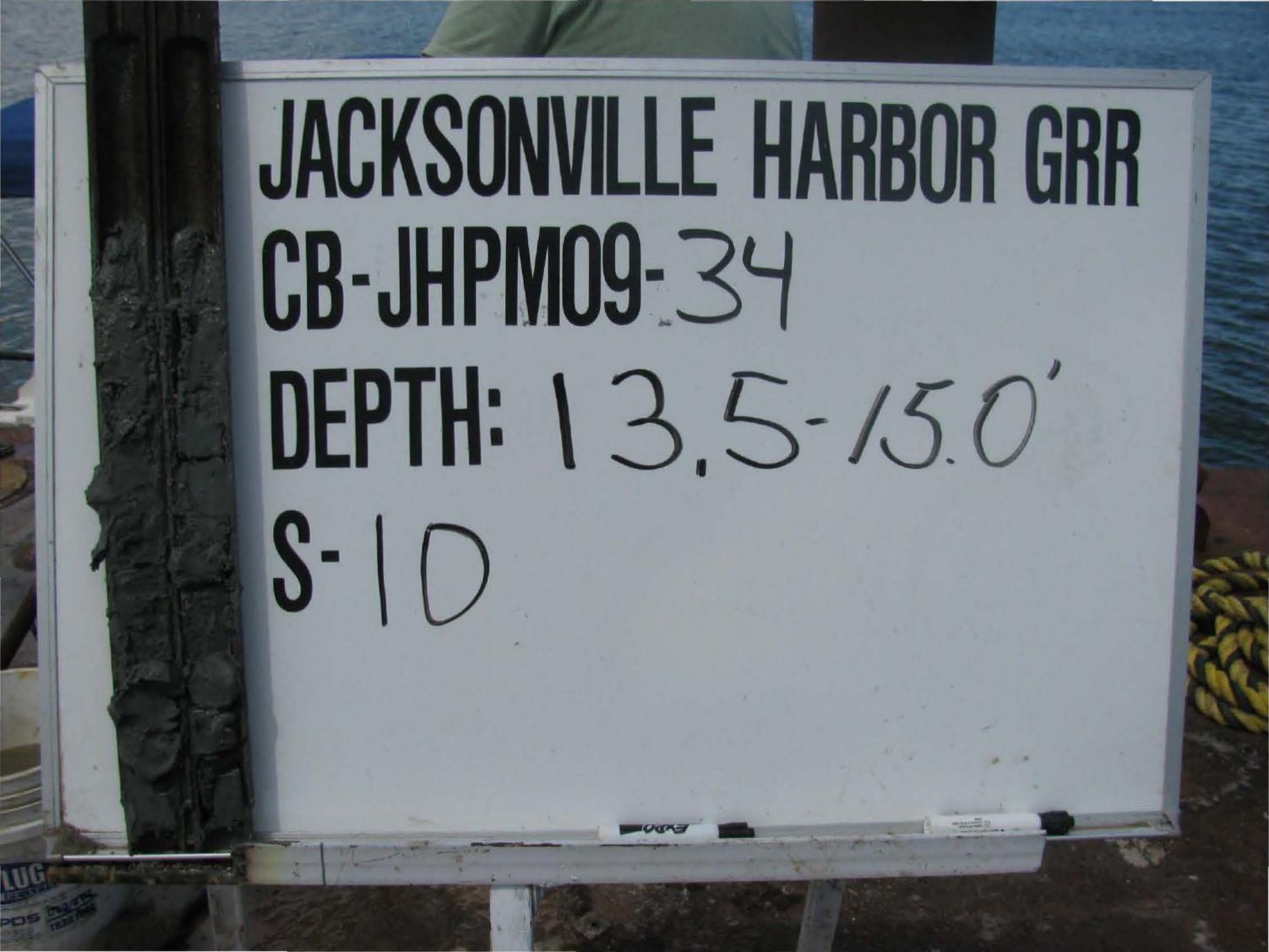
JACKSONVILLE HARBOR GRR CB-JHPM09-34 DEPTH: 6.0-7.5 S-5

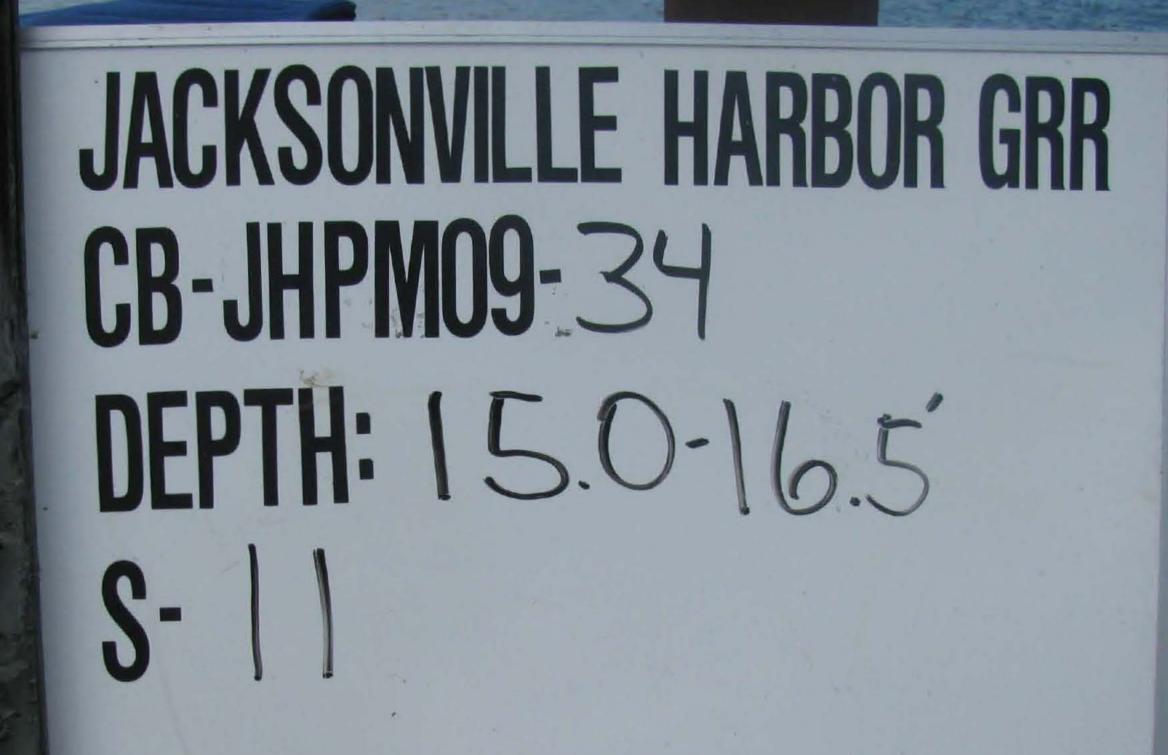
JACKSONVILLE HARBOR GRR CB-JHPM09-34 DEPTH: 7.5-90' S-6

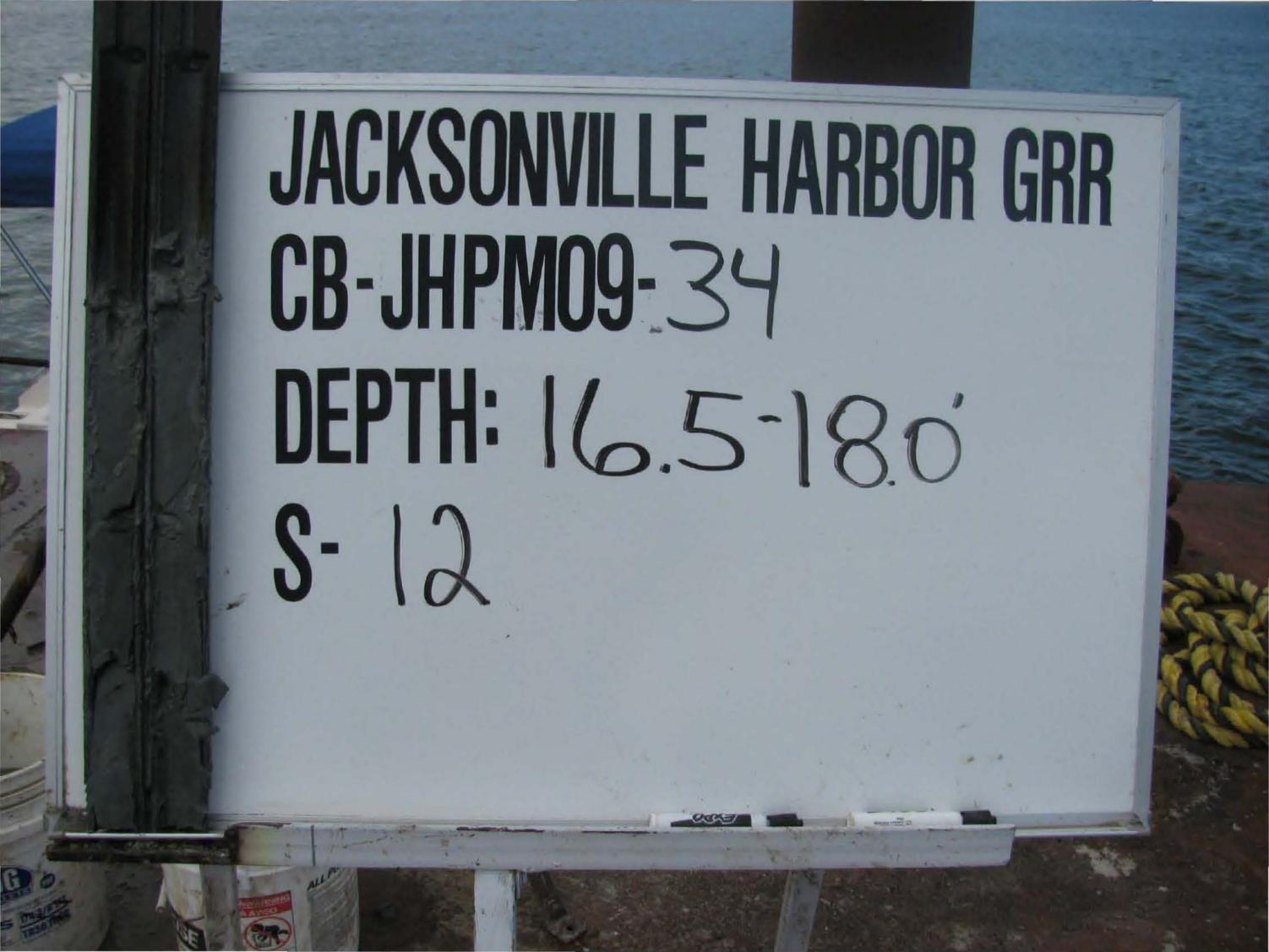
JACKSONVILLE HARBOR GRR CB-JHPM09-34 DEPTH: 9.0-10.5 9-

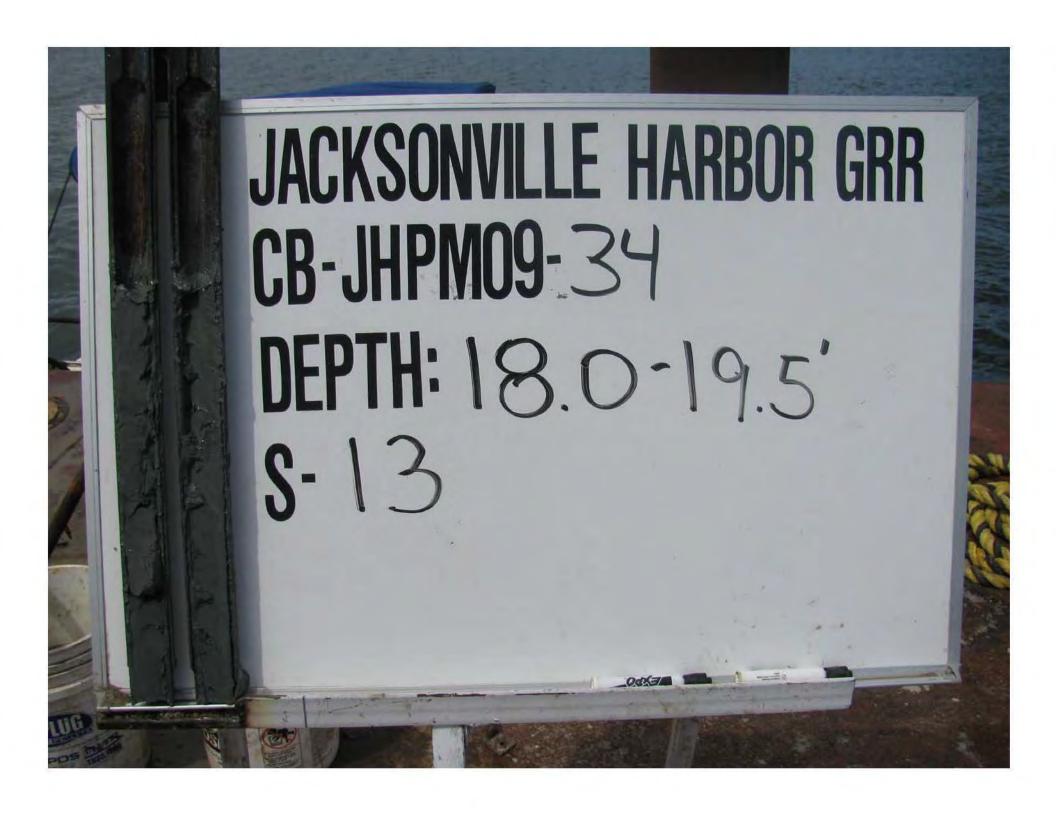
JACKSONVILLE HARBOR GRR CB-JHPM09-34 DEPTH: 10.5-12.0 5-8











TEST CORE BORING NUMBER "CB-JHPM09-35"

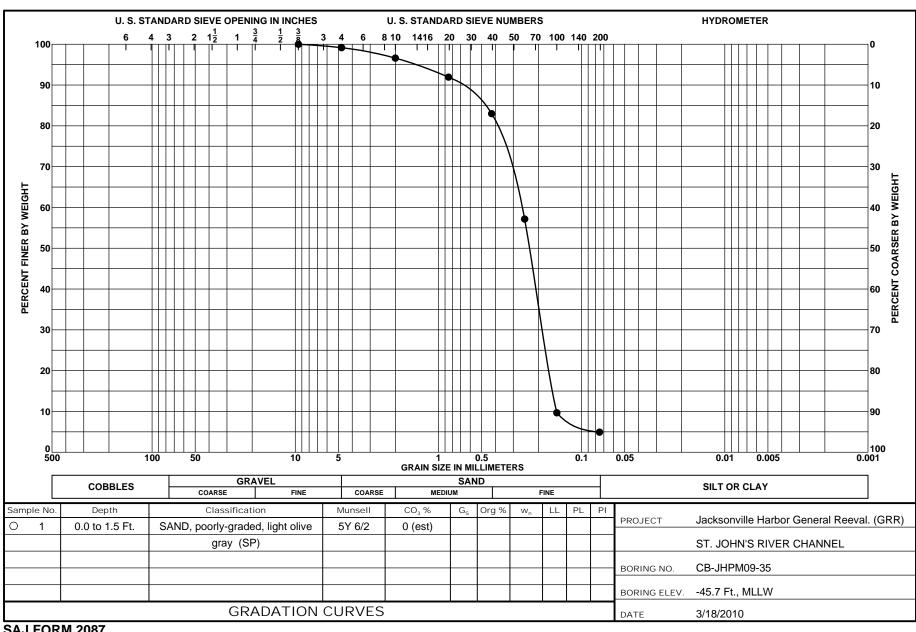
gINT Boring Log Laboratory Curves Sample Photographs

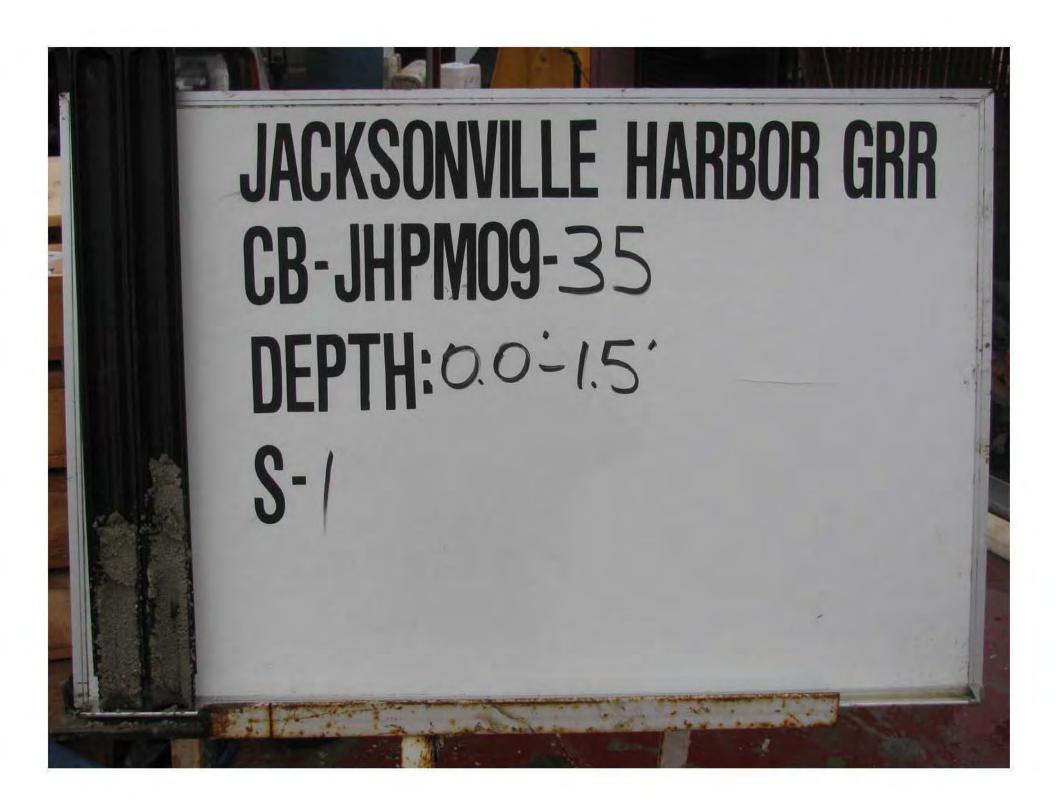
				DIVISION		INSTAI	IATI	ON				SHEET 1		1	
DRI	LLING	LOC	3	South Atlantic		l			istrict			OF 2 SH	EETS	;	
1. PRO	<i>JECT</i>					9. SIZE AND TYPE OF BIT See Remarks								1	
J	acksonville	Harb	or (General Reevalua	tion Report (GRR)	10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL									
	T. JOHN'S					State Plane, FLE (U.S. Ft.) NAD83 MLLW									
	ING DESIGI		N_	i	COORDINATES	11. MANUFACTURER'S DESIGNATION OF DRILL AUTO HAMMER Diedrich D-50 Truckrig MANUAL HAMMER									
	B-JHPM09			X = 45	9,932 Y = $2,204,315$										
			erir	ng & Testing, Inc.	2009D08	12. TO	OTAL	SAMP	LES		7	0			
4. NAM	1E OF DRILL	.ER		<u> </u>	'	13. TO	OTAL	NUME	BER CORI	E BOXES	0				
	im Clarkso					14 FI	FVAT	TION (GROUND	WATER	TIDAL			1	
	ECTION OF I VERTICAL	BORIN	V G	DEG. FR VERTICA	OM BEARING AL						STARTED	COMPLETE	D	-	
_	INCLINED			ļ		15. Di	ATE B	ORIN	G		02-02-10	02-02-1			
6. THIC	CKNESS OF	OVER	BUF	RDEN N/A		16. El	EVA	TION 7	TOP OF B	BORING	-45.7 Ft.				
7 DED	TH DRILLED) INIT) PO	PCK N/A		17. TO	OTAL	RECO	VERY FC	R BORING	78 %				
				·		18. SI	GNA7	URE A	AND TITL	E OF INSPE	ECTOR				
8. TOT.	AL DEPTH (OF BO	RIN	<i>G</i> 18.3 Ft.		<u> </u>	V. J.	Thor	mpson I	II, Civil E	ngineer				
		GEND					BOX OR SAMPLE	ROD				VS/	-UE		
ELEV.	DEPTH	EGE		CLASSIFICAT	TION OF MATERIALS	REC.	Şĕ	RQD OR UD			REMARKS	BLOWS/ 0.5 FT.	N-VALUE		
			_				SΒ					<u>m</u> O	ż	4	
-45.7	0.0								-45.7						
	-		S	AND, poorly-grad	ed, mostly angular to							0		+ 0	
	- -	· · · ·		ubangular fine to rand-sized quartz,		53	1				SPT Sampler	0		ţ	
-	_	 ∷∷	SI	ubangular shell up	to 1/8", wet, 5Y 6/2 light		Ι΄				or roampier		1	-	
	- -	::::	ol	live gray (SP)			<u> </u>	-	-47.2			1		Ŧ	
-47.7	2.0	<u> </u>	<u> </u>			 100	2				SPT Sampler	11		L	
	- A	ΪΙΪ	l Li	IMESTONE, sand	y, non-fossiliferous, soft, red, medium grained,	1,00	-		-48.2		or roumpier	50		ŀ	
	Veathered	III		oist, 5Y 8/2 pale										Ŧ	
	r /eath	III								1 v 5-1/2"	Diamond Impre	anated Rit		F	
						1,00	Run	RQD		4 X 3-1/2	DT = 6 mins	griateu bit		-	
	ı I I I Moderately	ITI				100	# 1	0			HP = 300 psi			F	
	ром	III									DFR = 25 %			ļ.	
		I I I	L						-50.7					<u>-</u> 5	
	- Wea.	III		t El50.7 Ft., mo eathered, fine gra	derately hard, slightly									F 3	
	- N.IS		l **	eathered, line gra	iiriea, solia									F	
	<u> </u>	 	ŀ₄	t El51.7 Ft., ver	y soft, highly weathered										
	- '	III												F	
	lered	ITI												L	
	r r 'eath	ITT												L	
	IIIII	III								4 x 5-1/2"	Diamond Impre	gnated Bit		F	
	- I High	ITI				55		RQD	1		DT = 4 mins			F	
ŀ	<u> </u>	III					# 2	53			HP = 300 psi DFR = 25 %			ţ	
	- I	III.	\mathbb{L}_{A}	t El54.7 Ft., mo	derately hard.						2 20 70			F	
	(pa.	ITI		nweathered, fine										F	
	T	III												-10	
	I I I I I Unweathered	III												F '	
	- 5 - ¥	I T I												F	
		IIII	\-A	t El56.7 Ft., sof	, highly weathered									F	
	<u> </u>	ĮĮĮį.			derately hard, slightly	100	3	 	-57.2		SPT Sampler	50/0.4'		t	
	<u> </u>	ITI	W	eathered		100	۲	1	-57.6		or r campler	30/0.4		F	
	- pə	III III								,	Advanced Boring	a a		ţ	
	T -	III					L		-58.7					Ŀ	
	- Wea	I T I				67	4		-59.0		SPT Sampler	50/0.3'		F	
	' ' ' Slightly Weathered	III								4 x 5-1/2"	Diamond Impre	gnated Bit		ļ.	
		III				100		RQD	1		DT = 4 mins	-		F	
	- 1	ITI					# 3	40			HP = 300 psi DFR = 25 %			F	
-60.7	t 15.0	IIII	l				1		l		2 20 /0			h	

SAJ FORM 1836 JUN 02

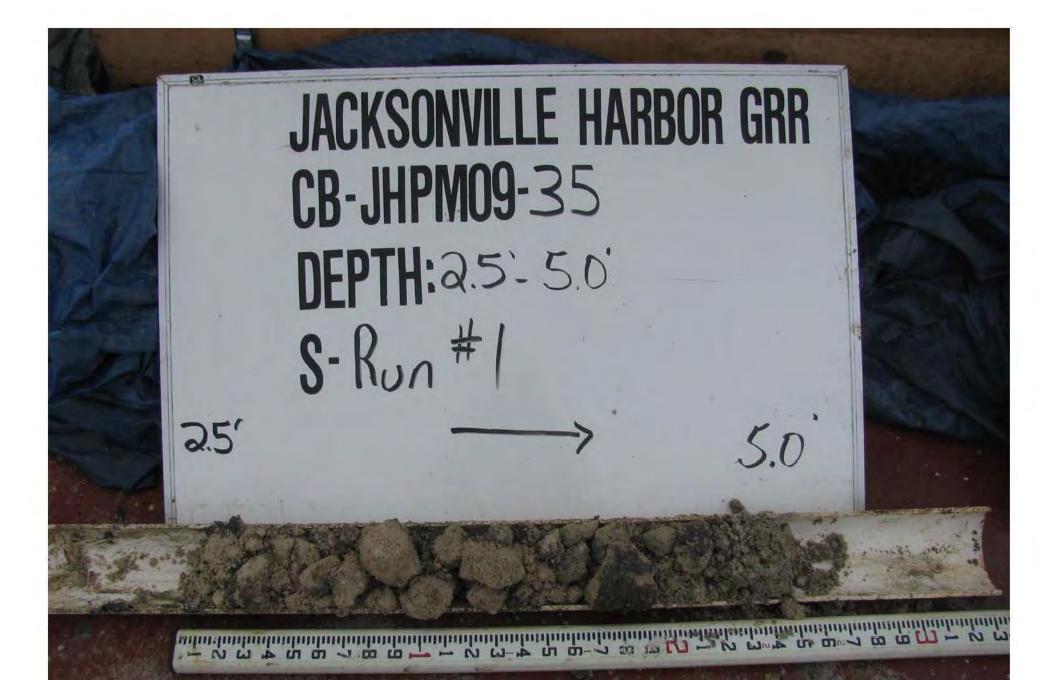
(Continued)

DR	II I ING	G (Cont. Sheet)	1	LLATIC				g Designation CB-JHPM	SHEET 2		
PROJE			- (John Jilot)	+	ksonvi				TUM HORIZONTAL	OF 2 S	HEETS
		arbor (General Reevaluation Report (GRR)	1	te Plar				1 1 1	MLLW	
	ION COORDI	ELEVA		TOP	OF B	ORIN	G				
X =	459,932 	-45.7 Ft.						70 -	ш		
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERI	ALS	Rİ	% EC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-64.0	18.3 SI. Wea. M Slightty Weathered	I I I	∼At El62.7 Ft., soft, moderately w	odian for I in I casing I drilling dal statio d at 11:1 g of +2.4 Rock Cor. PSI. ATORY ICATION	0 e	00	Run # 3	RQD 40	4 x 5-1/2" Diamond Imp DT = 4 mins HP = 300 ps DFR = 25 % -64.0 140# hammer w/30" drop used 2.0' split spoon (1-3/8" I.D. x 2 Abbreviations: DT = Drill Time. HP = Hydraulic Pressure. DFR = Drill Fluid Return.	si 5 5	

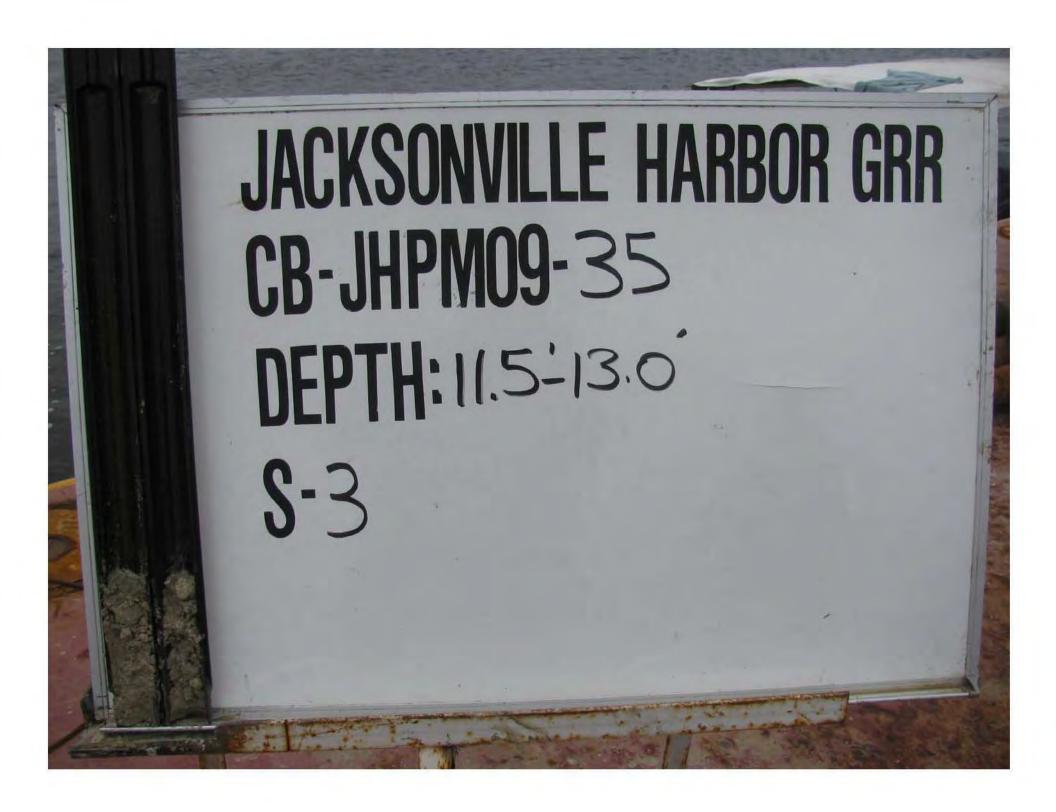




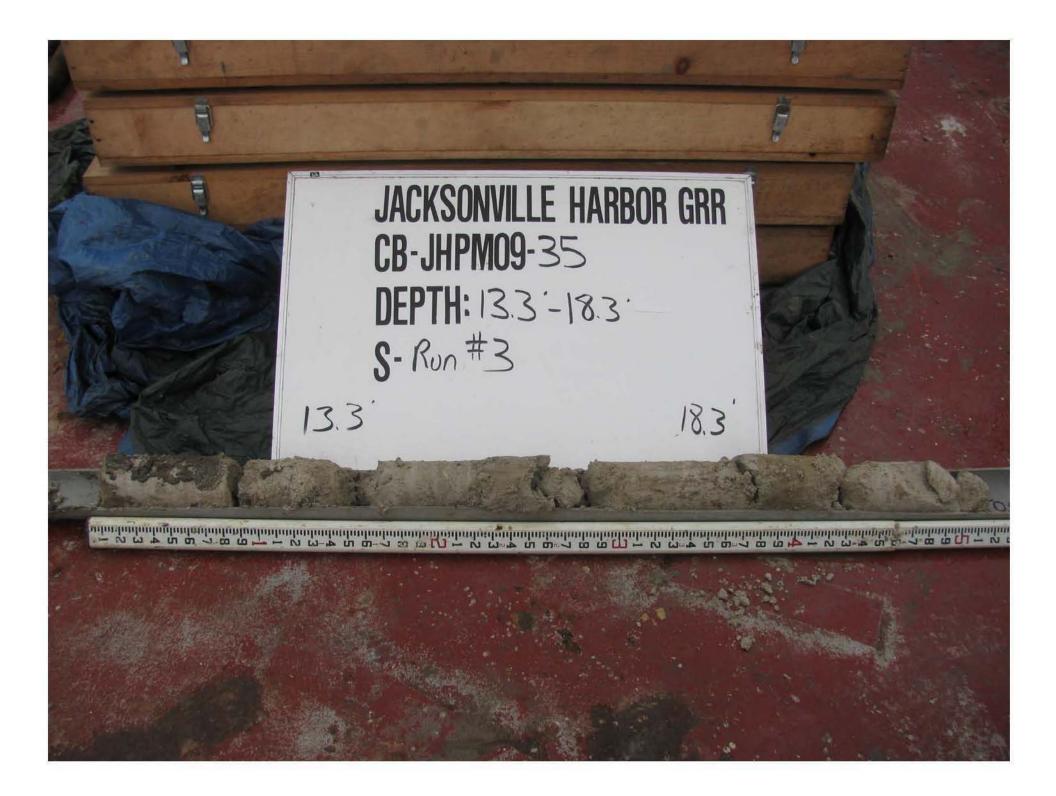












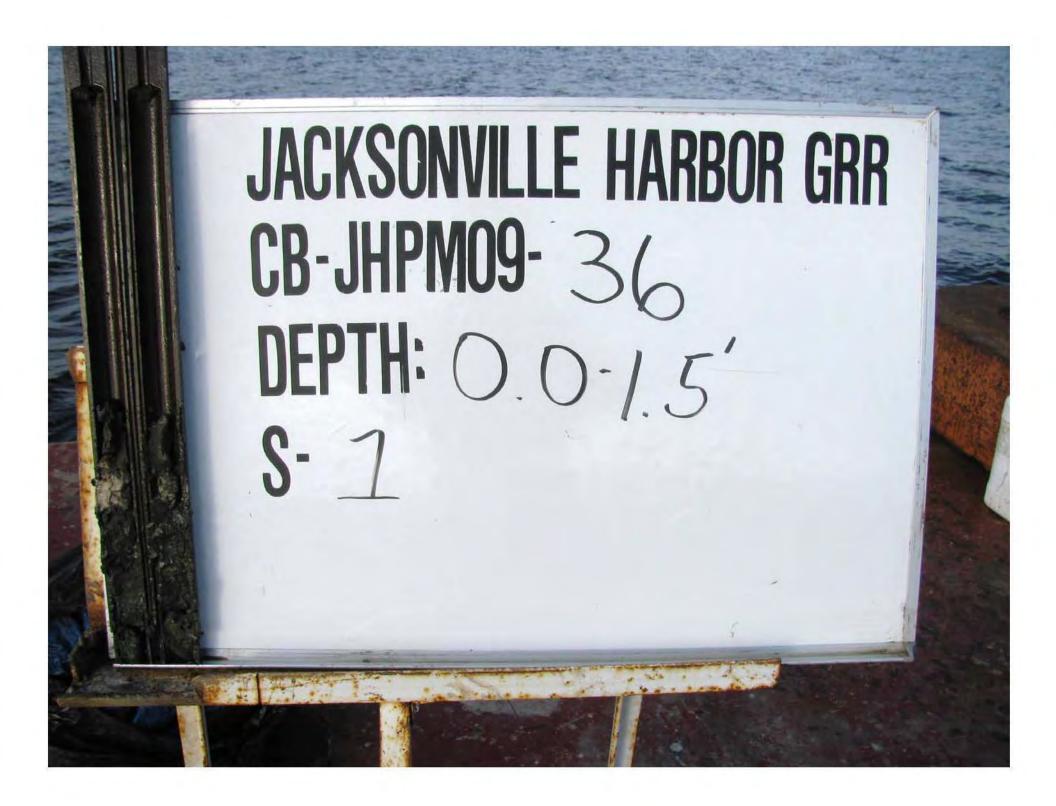
TEST CORE BORING NUMBER "CB-JHPM09-36"

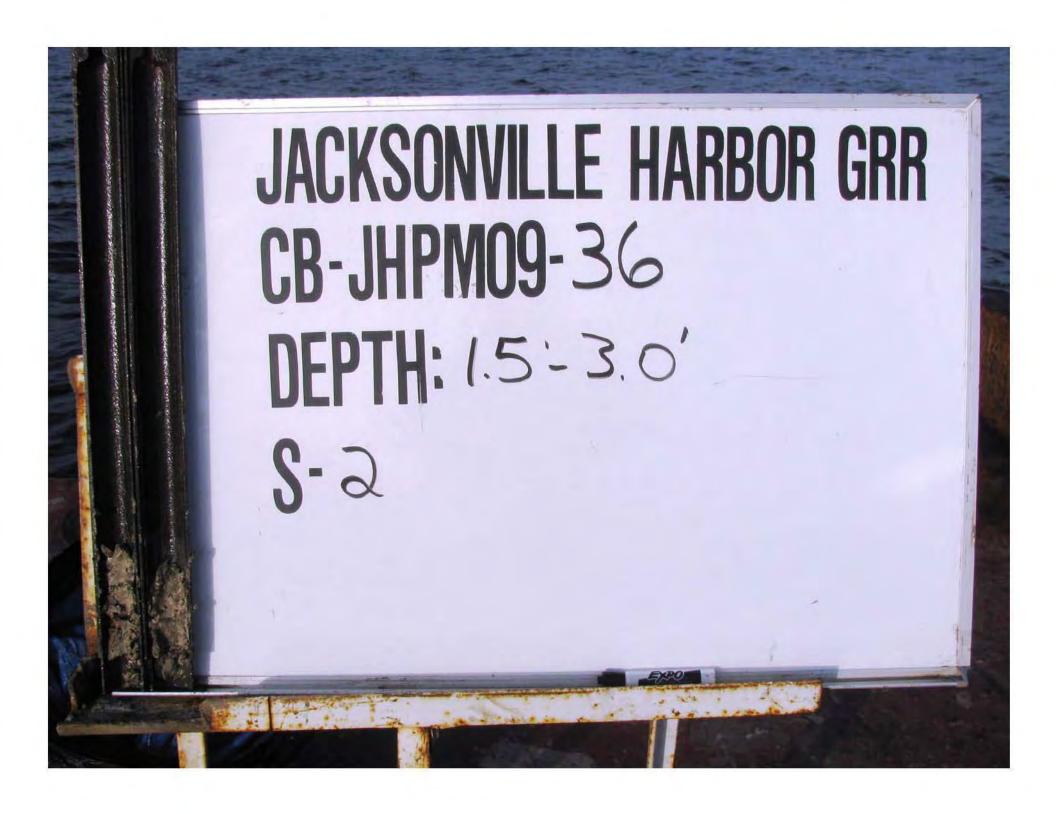
gINT Boring Log Laboratory Curves Sample Photographs

	1	NON	Luca			ig Designation	CD-3111 WIO3				
DRILLING I	$LOG \begin{vmatrix} DIVIS \\ SG \end{vmatrix}$	GION outh Atlantic	INSTAL Jack			istrict		SHEET 1 OF 3 SH	IFFTS		
1. PROJECT	1 30	wai i i alamio	Jacksonville District OF 3 SHEETS 9. SIZE AND TYPE OF BIT See Remarks								
Jacksonville	Harbor Gener	al Reevaluation Report (GRR)	10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL								
TALLEYRAN			State Plane, FLE (U.S. Ft.) NAD83 MLLW								
2. BORING DESIGN CB-JHPM09		LOCATION COORDINATES $X = 462,062 Y = 2,191,979$	11. MANUFACTURER'S DESIGNATION OF DRILL ☐ AUTO HAMMER Diedrich D-50 Truckrig ☒ MANUAL HAMMER								
3. DRILLING AGEN		CONTRACTOR FILE NO.	DISTURBED UNDISTURBED (UD)								
	ngineering & T	esting, Inc. 2009D08	12. TOTAL SAMPLES 20 0								
4. NAME OF DRILL			13. TO	OTAL I	NUME	BER CORE BOXES	2				
Marvin Strick 5. DIRECTION OF E		DEG. FROM BEARING	14. ELEVATION GROUND WATER TIDAL								
✓ VERTICAL		VERTICAL	15. DA	ATE B	ORING	G	STARTED	COMPLETE			
	OVEDBUBBEN	N/A	1/ 5/	<i></i>	ELONI 3	TOD OF BODING	-34.4 Ft.	02-04-1	U		
6. THICKNESS OF		N/A	—			TOP OF BORING VERY FOR BORING	76 %				
7. DEPTH DRILLED	INTO ROCK	N/A				AND TITLE OF INSPI					
8. TOTAL DEPTH C	F BORING	30.0 Ft.				mpson III, Civil E					
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	"REC	BOX OR SAMPLE	RQD OR UD		REMARKS	BLOWS/ 0.5 FT.	N-VALUE		
			\dashv								
-34.4 0.0	 	silty, mostly angular to subangular	+	-		-34.4					
F	fine to r	nedium-grained sand-sized quartz,		_			ODT C	0			
	some s	ilt, wet, organic odor, 5Y 3/2 dark ay (SM)	67	1			SPT Sampler	0	0		
-35.9 7 1.5	IIIII SUT O	rganic-L, nonplastic, very soft, wet,			-	-35.9		0			
<u> </u>		odor, 5Y 7/2 light gray (OL)						0	<u> </u>		
<u> </u>			33	2			SPT Sampler	0	0		
<u> </u>		27.4 Et. fav. angular ta aubangular				-37.4		0			
<u> </u>	fine-gra	t El37.4 Ft., few angular to subangular ne-grained sand-sized quartz, 5Y 3/2 dark live gray					0	4			
<u> </u>	olive gr		60	3			SPT Sampler	0	0		
<u> </u>		00.0 51. (00.00.00.00.00.00.00.00.00.00.00.00.00.				-38.9		0	Ĺ		
-	shell up	88.9 Ft., trace angular to subangular to 3/4"						0			
<u> </u>			53	4			SPT Sampler	0	0		
<u> </u>						-40.4		0	L		
E								0			
E			100	5			SPT Sampler	0	0		
E						-41.9		0			
F								0			
F			73	6			SPT Sampler	0	_		
F	At El4	42.9 Ft., few angular to subangular				-43.4		0	0		
F								0			
F			60	7			SPT Sampler	0	_		
F						-44.9		0	0		
F		At El44.9 Ft., some angular to subangular fine-grained sand-sized quartz, few angular			1			0			
F		ined sand-sized quartz, rew angular ngular shell up to 1/4"	73	8			SPT Sampler	0	1		
į į						-46.4	,	0	0		
ļ ļ					1	70.7		0			
<u> </u>			53	9			SPT Sampler	0			
<u>F</u>						47.0	Si i Gampioi		0		
E		7.9 Ft., little angular to subangular	<u> </u>		1	-47.9		0			
F		ined sand-sized quartz	100	10			CDT Complete				
F			100	10			SPT Sampler	0	0		
A LEODM 103						-49.4	(Continued)	0			

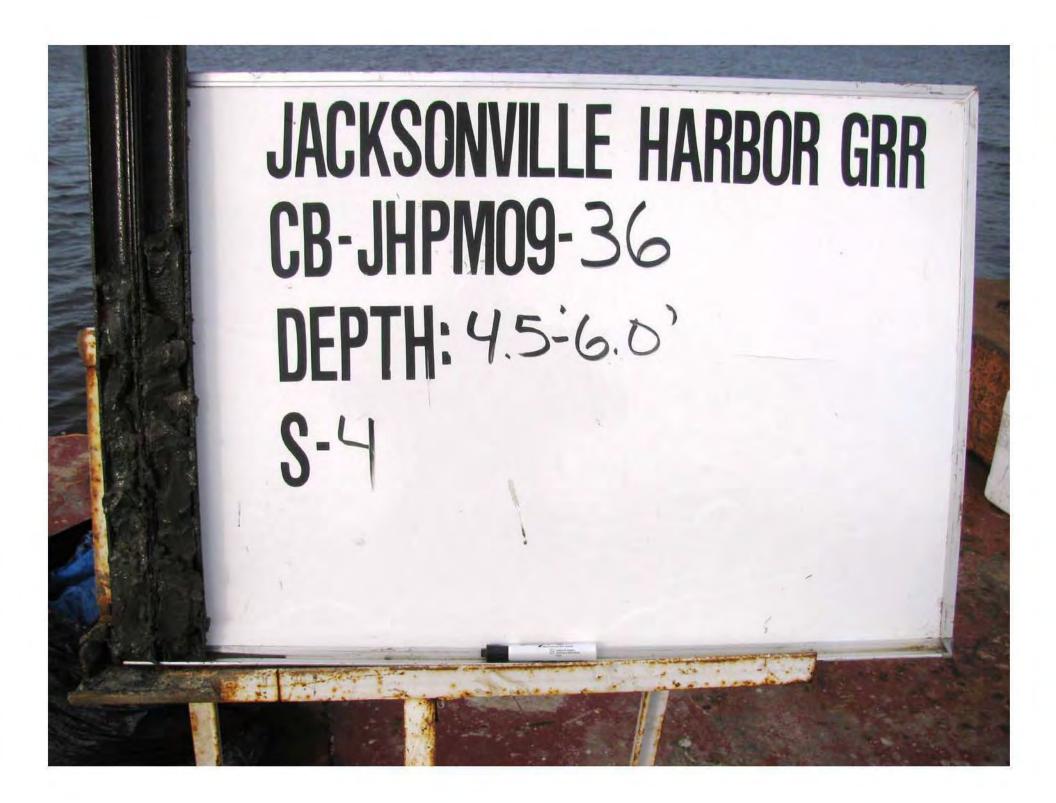
noville ATE S Plane, ON TOI T. 100 93	P OF E	л/DAT (U.S.	Ft.) NAD83 N	RTICAL MLLW Shows a second se	N-VALUE
PN TOP	BOX OR SAMPLE	BORIN	G	BLOWS/ 0.5 FT.	N-VALUE
100	BOX OR SAMPLE				N-VALUE
<i>REC</i> .		ROD OR UD	REMARKS		N-VALUE
100		RQD OR UD	REMARKS		N-VALL
				_	
	11			0	
93			SPT Sampler	0	
93			-50.9	0	0
93				0	
	12		SPT Sampler	0	
1			-52.4	0	
				0	ļ ļ
73	13		SPT Sampler	0	2
			-53.9	2	
۱ ا				4	
73	14		SPT Sampler	5	14
			-55.4	9	\vdash
	۱,,		ODT 0 l	5	
93	15		SPT Sampler	15	33
			-56.9	18	$\vdash \vdash$
80	16		SPT Sampler	10 16	ł E
ılar	'0		•	17	33
67		1	-58.4	7	
	17		SPT Sampler	9	† ‡
	''		-59.9	12	21
			-59.9	7	
80	181		SPT Sampler	8	1
			-61.4	14	22
100				8	F
	19		SPT Sampler	15	ا ر
			-62.9	20	35
87				7	
	20		SPT Sampler	12	19
			-64.4	7	L 'š
			140# hammer w/30" drop used wit	h	
			2.0' split spoon (1-3/8" I.D. x 2" O.I	υ.).	
					<u> </u>
_	100	100 19	100 19	80 181 SPT Sampler -61.4 100 19 SPT Sampler -62.9 87 20 SPT Sampler -64.4 140# hammer w/30" drop used with	SPT Sampler

DRILLING LOG (Cont. Sheet)					ATION			g Designation CB-JHPINI	SHEET 3 OF 3 SHEETS			
PROJEC			•	COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL								
			General Reevaluation Report (GRR)	State	Plane,	FLE	(U.S.	. Ft.) NAD83	MLLW			
	ION COORDI			<i>ELEVATION TOP OF BORING</i> -34.4 Ft.								
X = 4	462,062	,191,979	-34.4	-τ. Τ	ωш			· · · · · · · · · · · · · · · · · · ·	Щ			
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIA		REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE		
			5. Water depth of -34.6 ft. recorded AM on 2/4/2010. Tide gage reading ft. mllw	of +0.2						-44		

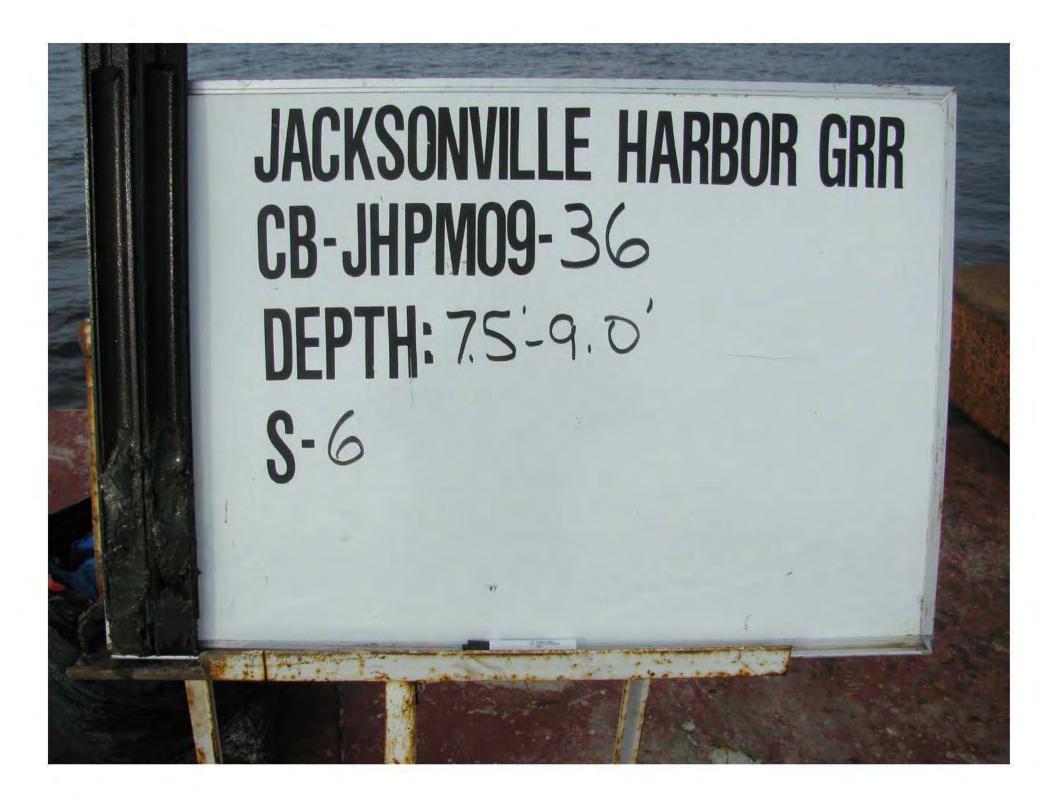


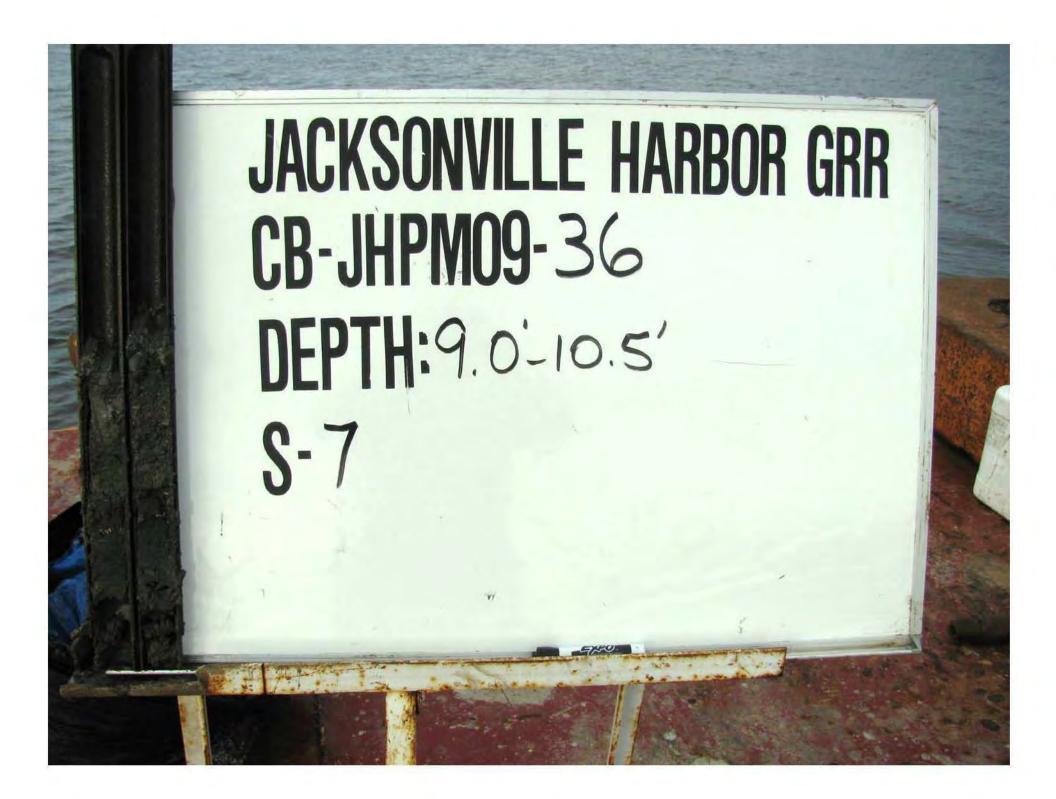


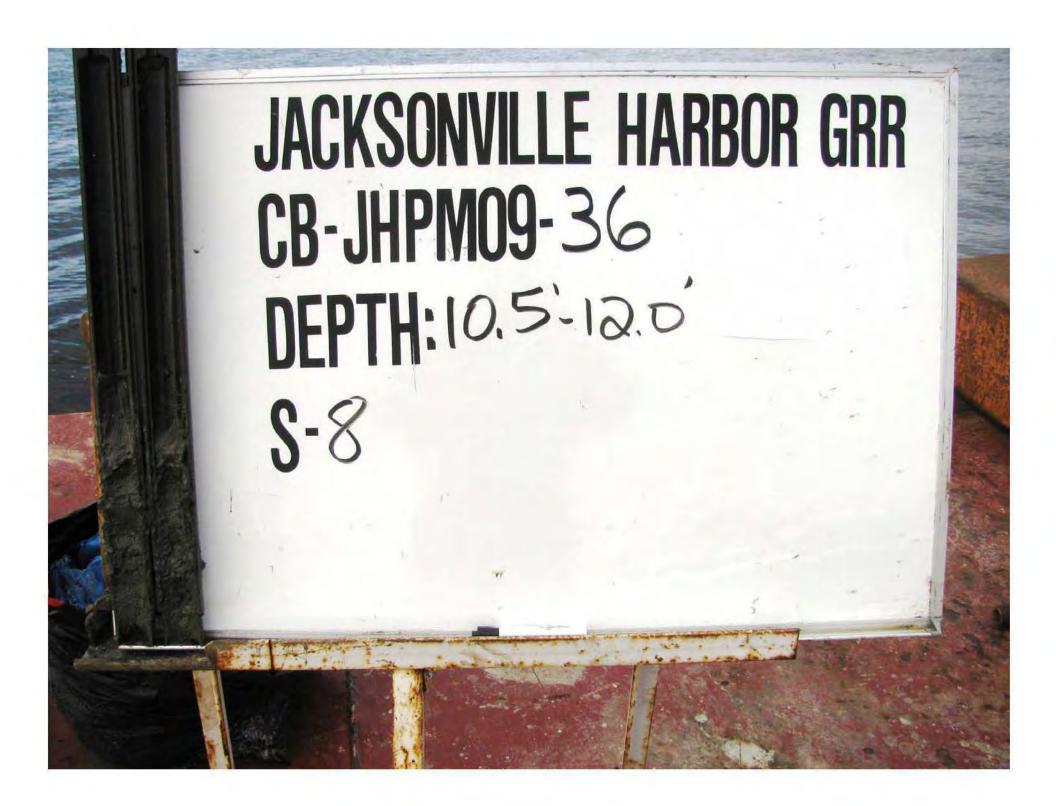


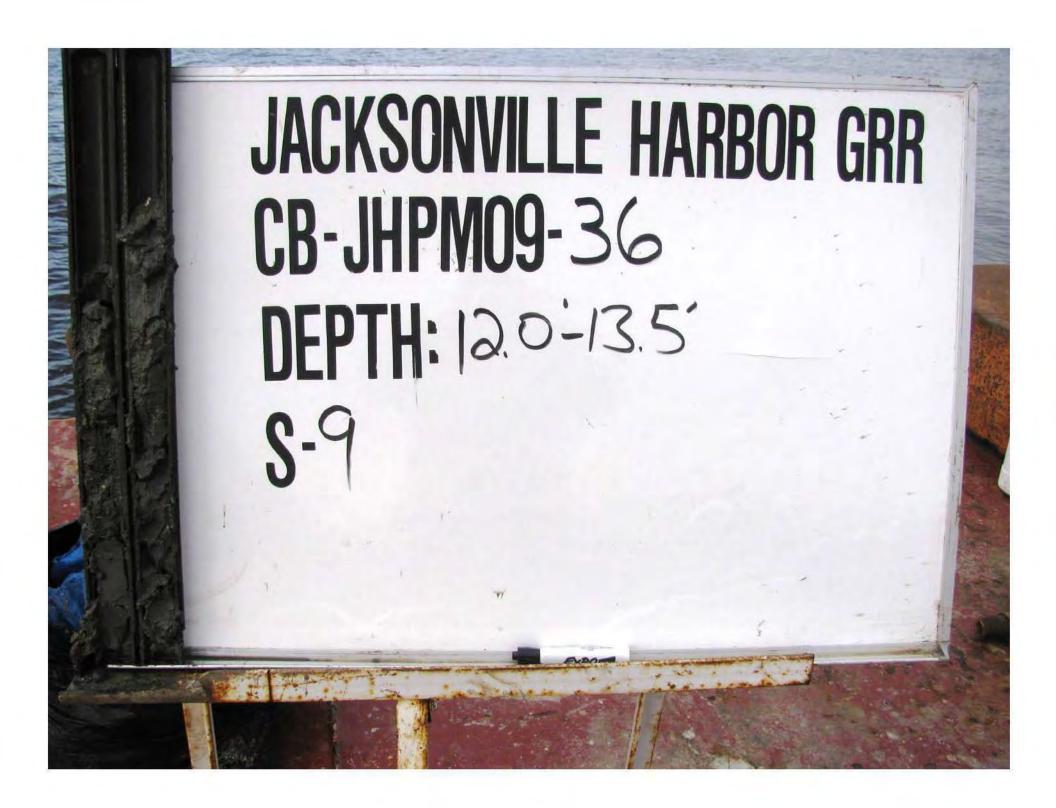


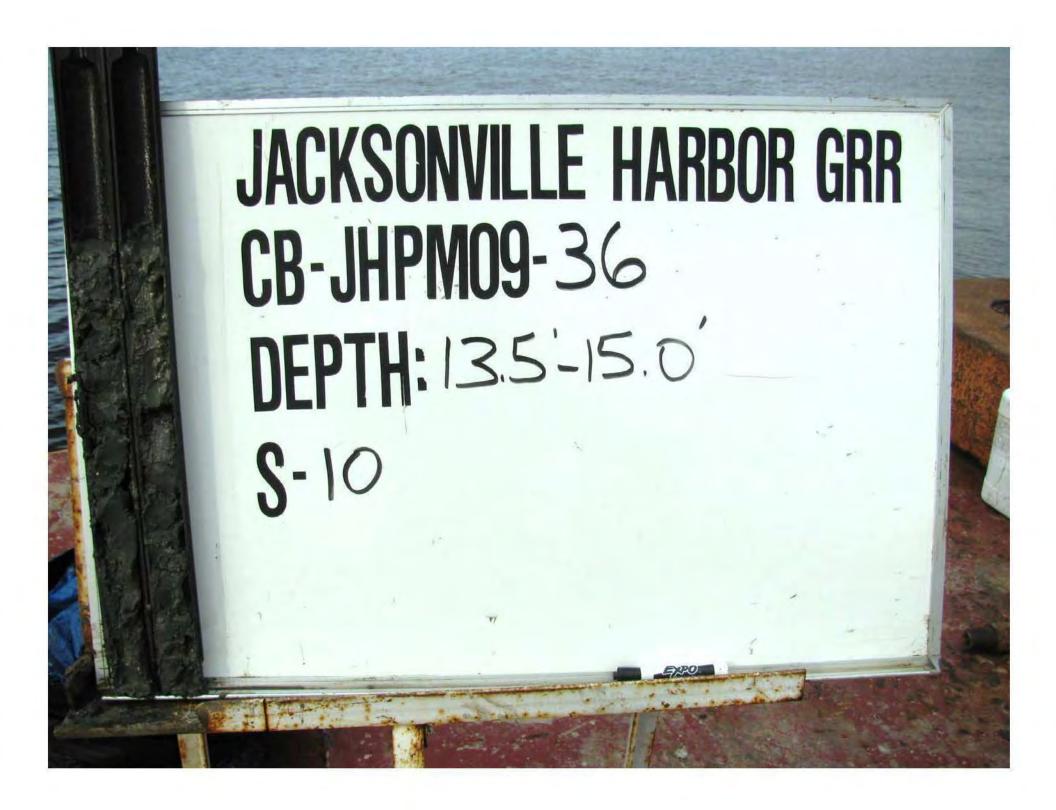




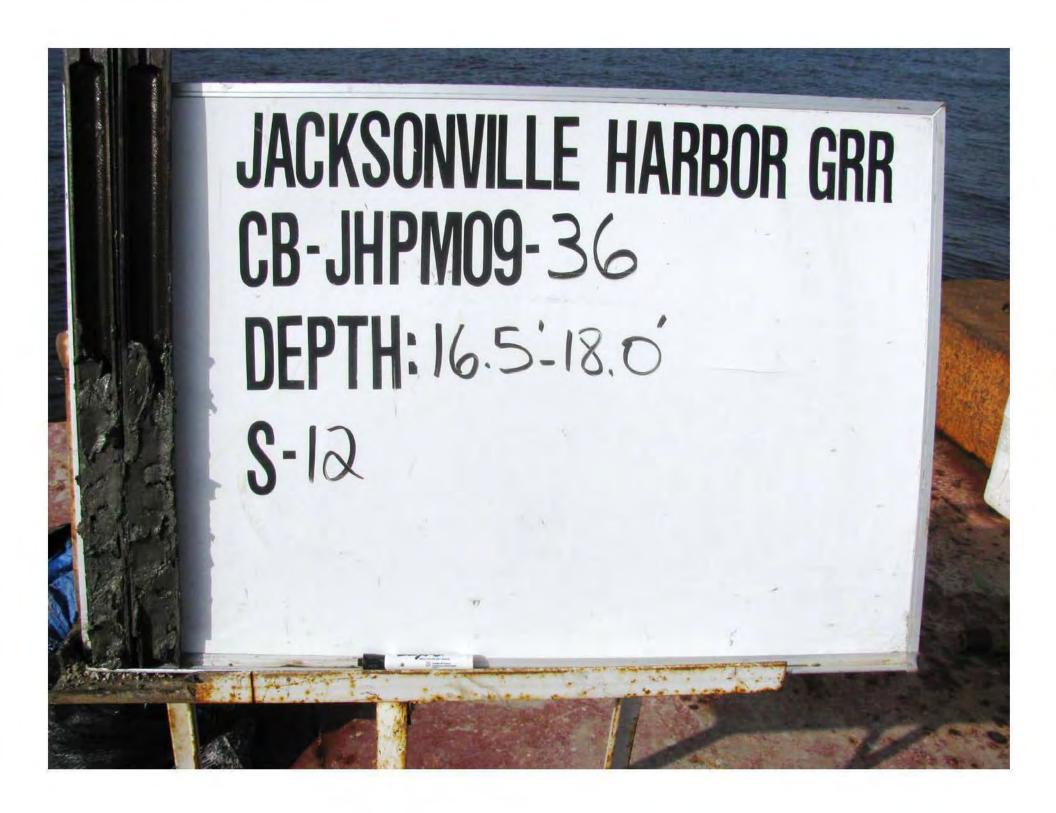




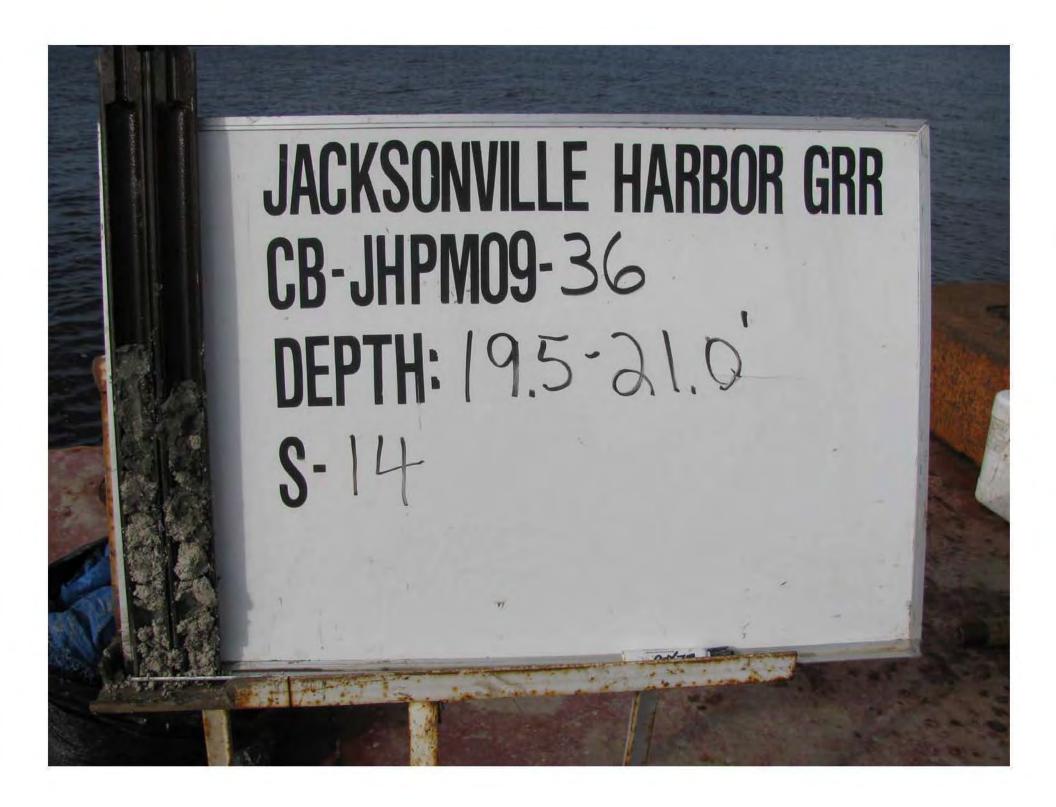


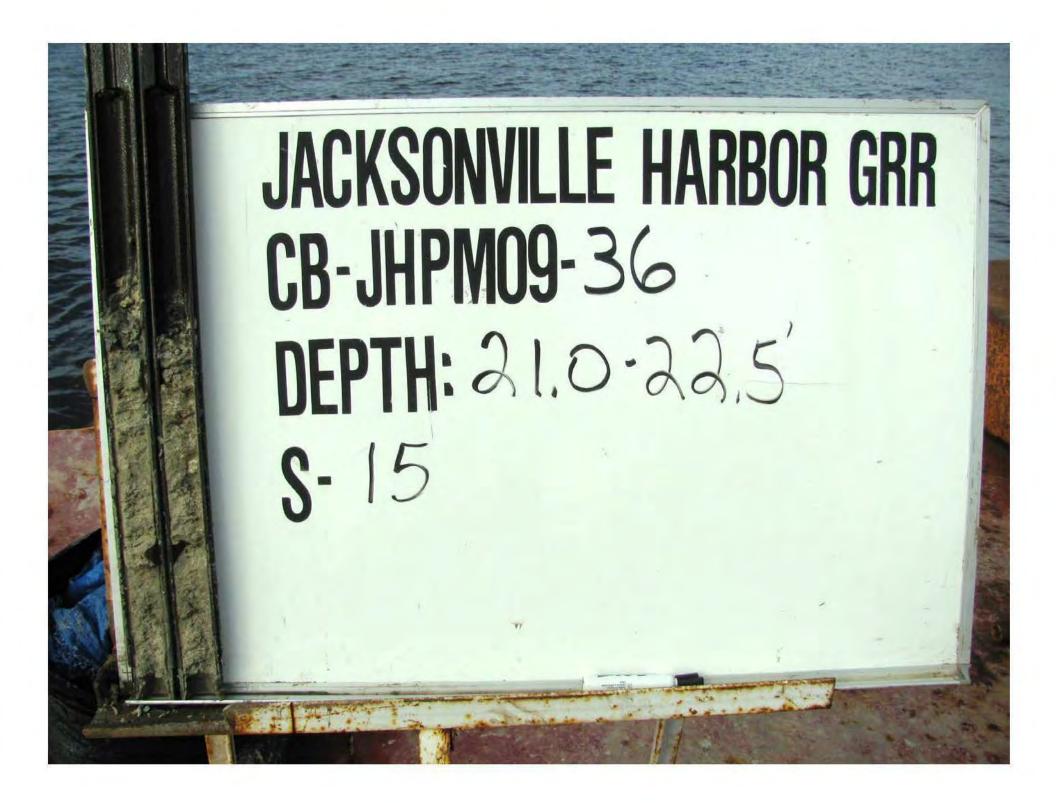


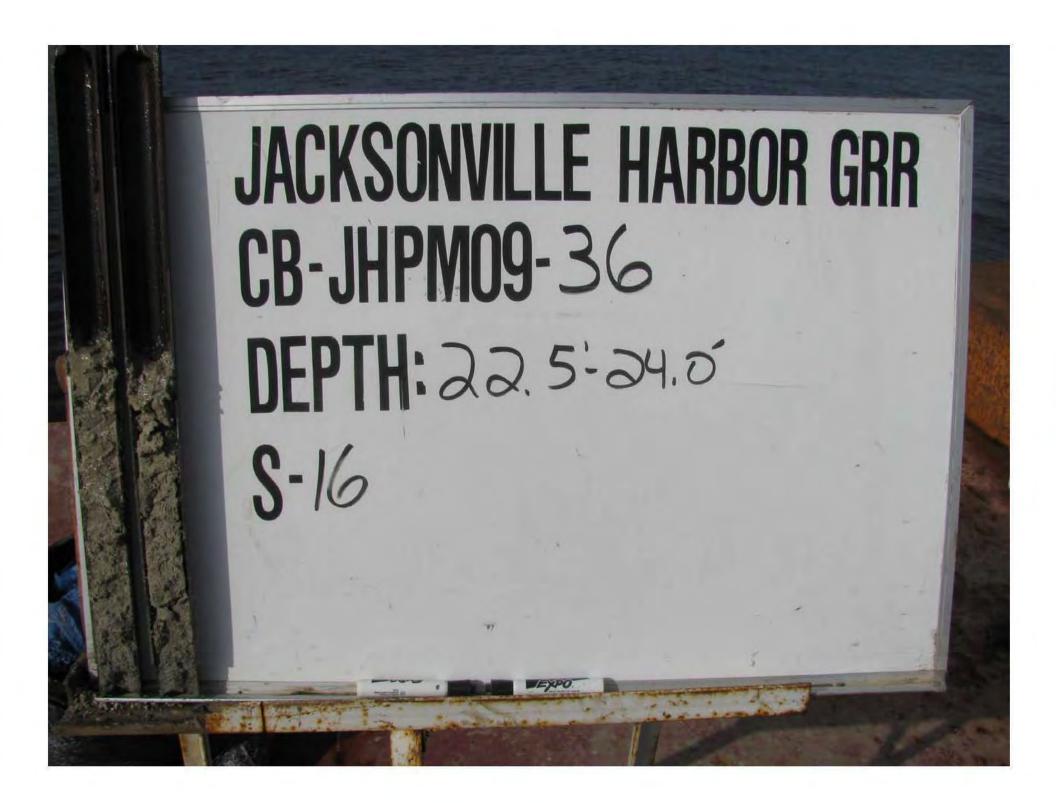


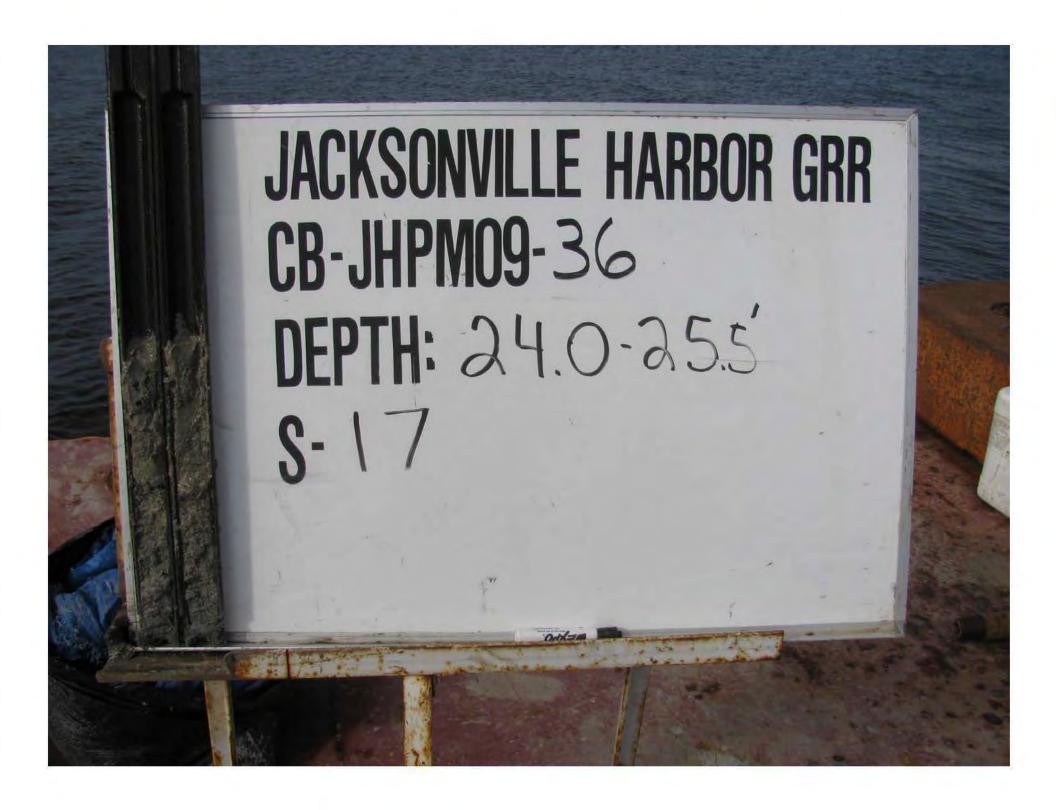


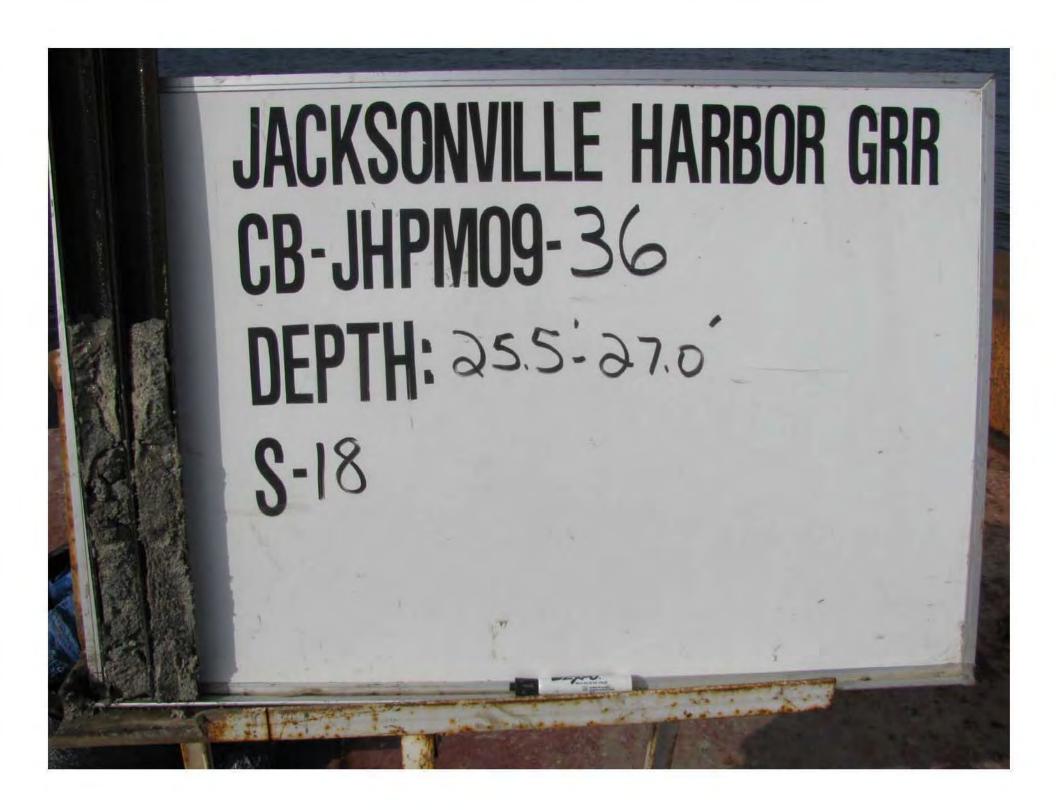


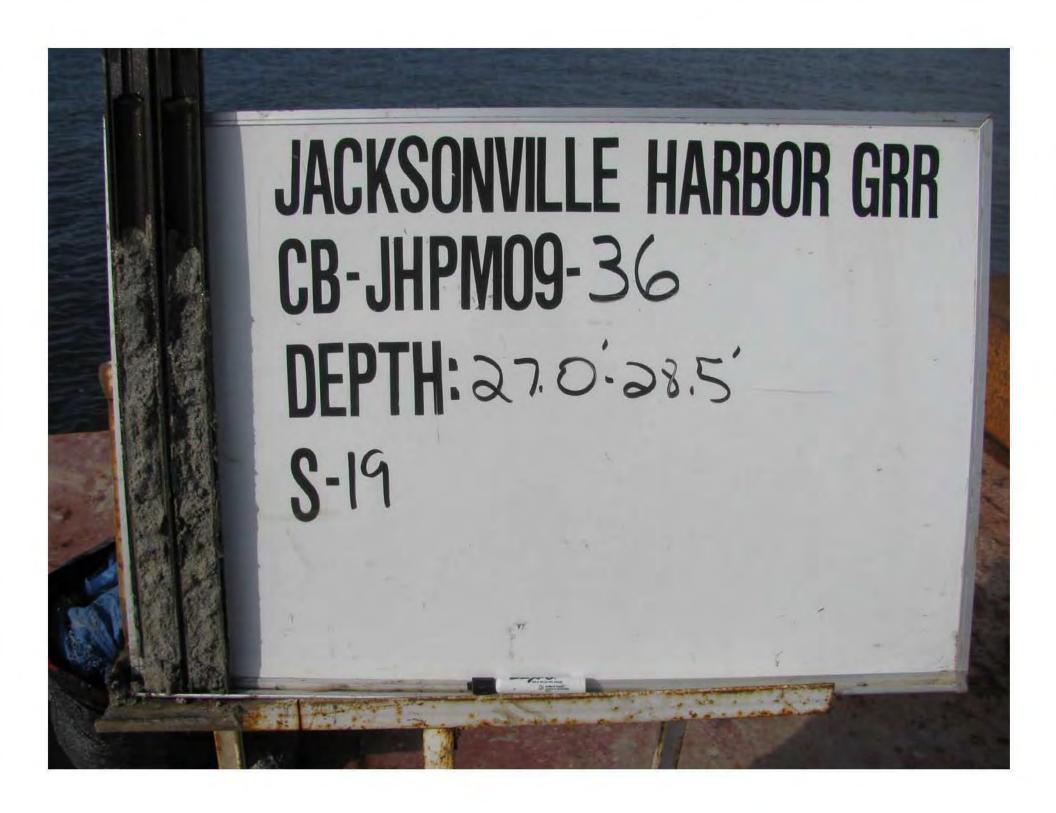


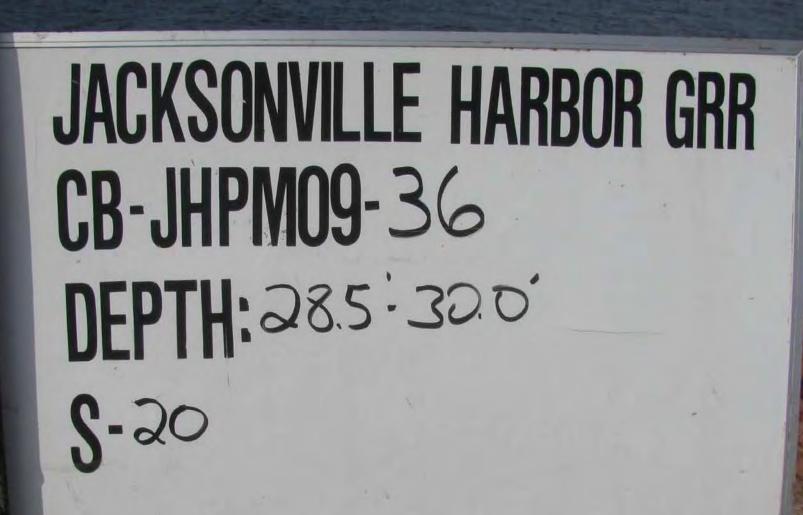










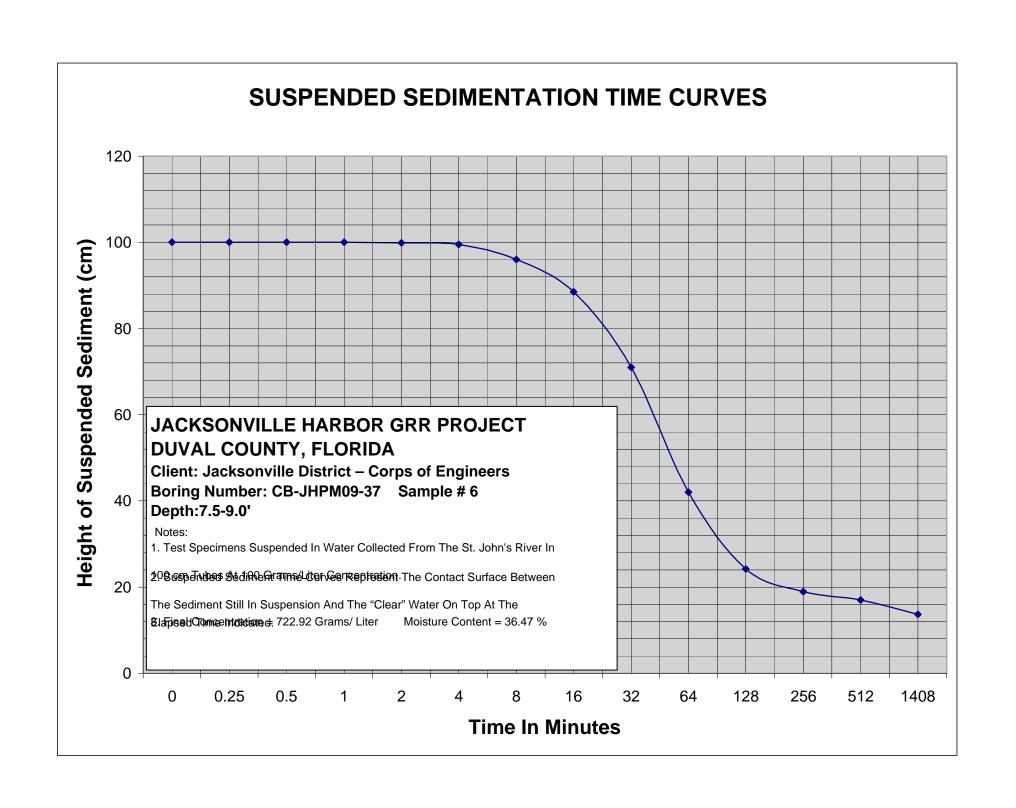


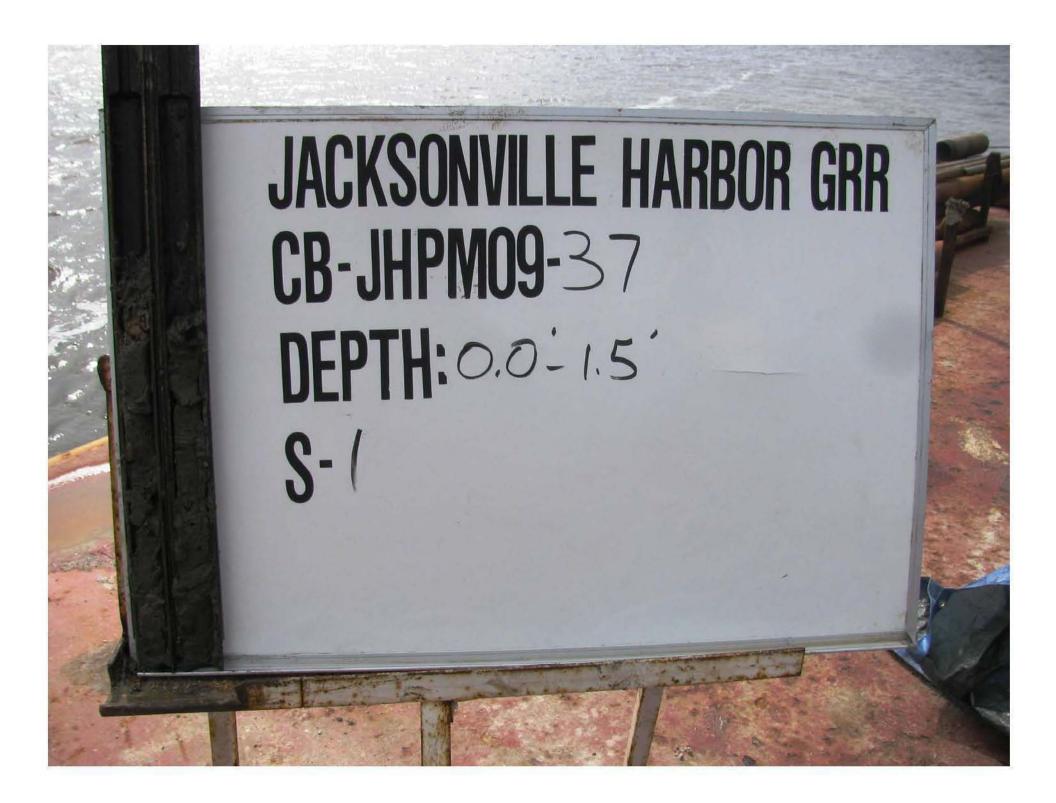
TEST CORE BORING NUMBER "CB-JHPM09-37"

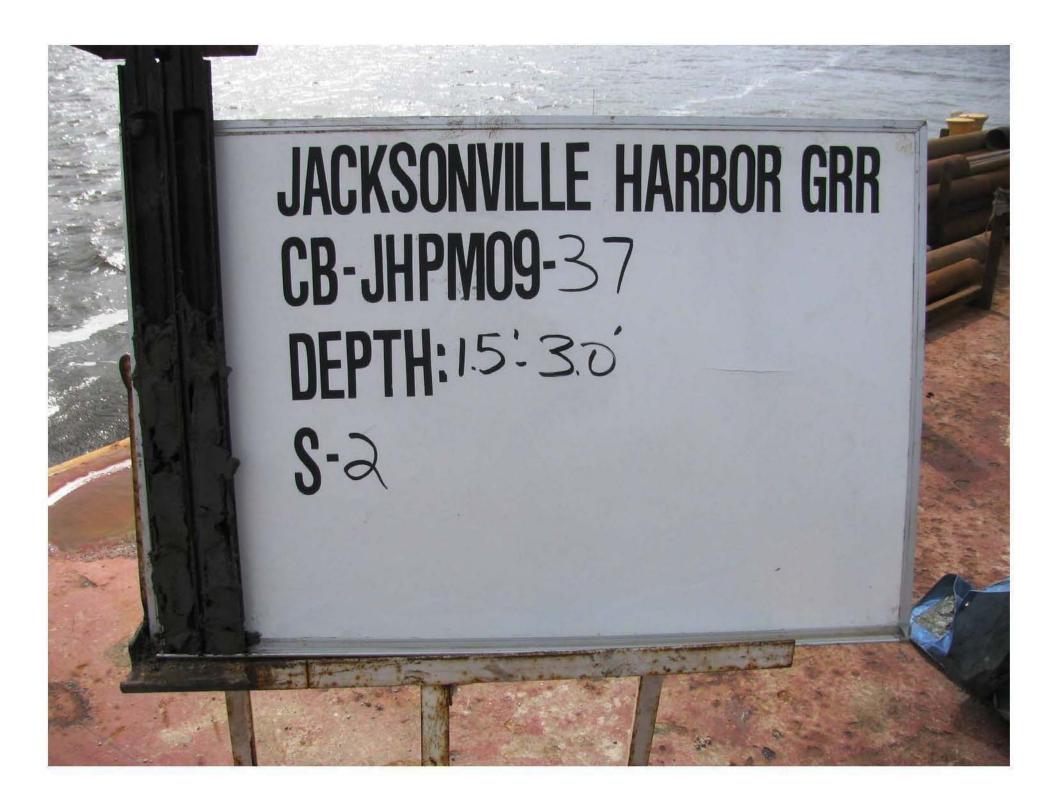
gINT Boring Log Laboratory Curves Sample Photographs

		Lauren				g Designation CB-J						
DRILLING	LOG	South Atlantic	INSTAL Jack			istrict		SHEET 1 OF 2 SH	FFTS			
1. PROJECT					Jacksonville District OF 2 SHEETS 9. SIZE AND TYPE OF BIT See Remarks							
Jacksonvi	le Harbo	or General Reevaluation Report (GRR)	10. CC	ORDI	INATE	SYSTEM/DATUM HORIZ		VERTICAL				
DRUMMO							D83	MLLW				
2. BORING DESIGNATION LOCATION COORDINATES CB-JHPM09-37				11. MANUFACTURER'S DESIGNATION OF DRILL AUTO HAMMER								
3. DRILLING AGE		$\lambda = 404,700$ $f = 2,207,392$		Died	rich L	D-50 Truckrig DISTURBE		NUAL HAM ISTURBED				
Challenge	Engine	ering & Testing, Inc. 2009D08	12. TC	TAL	SAMP	LES 18	0		, ,			
4. NAME OF DRI			13. TC	TAL	NUME	SER CORE BOXES 1						
Tim Clarks 5. DIRECTION OF		G DEG. FROM BEARING	14. EL	EVAT	ION C	GROUND WATER TIDAL						
VERTICAL		VERTICAL	15. DA	TE D	ODINI	START	TED	COMPLETE	D			
☐ INCLINED			13. DA	ITL D	OKIIVO	02-	01-10	02-01-1	0			
6. THICKNESS C	F OVERE	BURDEN N/A	16. EL	EVA7	TON 7	FOP OF BORING -36.9 F						
7. DEPTH DRILL	ED INTO	ROCK N/A				VERY FOR BORING 82 %	%					
8. TOTAL DEPTH	OF BOR					AND TITLE OF INSPECTOR						
<u> </u>	т т	20.0		_	THO	npson I I I, Civil Engineer			ш			
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	ĸĔĊ.	BOX OR SAMPLE	RQD OR UD	REM	1ARKS	BLOWS/ 0.5 FT.	N-VALUE			
-36.9 0.0	\top					-36.9						
-30.8 0.0	 	SAND, silty, mostly angular to subangular	+			-30.3		0				
Ł	11111	fine to medium-grained sand-sized quartz, some silt, wet, 5Y 4/2 olive gray (SM)	93	1		QDT Q	Sampler	0	Ŀ			
-		Some sint, wet, or 4/2 silve gray (Sivi)	33	'			ampiei	0	0 -			
F	141411					-38.4			-			
F								0				
ļ.			80	2		SPT S	Sampler	0	0			
<u> </u>		A				-39.9		0				
Ŀ		At El39.9 Ft., trace angular shell up to 1/8", organic odor, 5Y 4/1 dark gray						0				
Ŀ			87	3		SPT S	Sampler	0	0			
ŀ						-41.4		0	l ° ⊦			
F		At El41.4 Ft., discontinue shell, 5Y 5/1 gray						0	-			
F			47	4		SPT S	Sampler	0	▎▁▐			
ļ.						-42.9		0	0			
F	111111	At El42.9 Ft., trace angular shell up to 1/8"				72.0		0				
ţ			87	5		SPT S	Sampler	0	l t			
F							- Carripion	0	0			
Ŀ						-44.4		1				
⊢			80	_		CDT (\		-			
F			00	6			Sampler	0	0			
F						-45.9		0				
ţ.								0				
Ļ			73	7		SPT S	Sampler	0	0			
ţ						-47.4		0				
Ł								0	lE			
F			100	8		SPT S	Sampler	0				
F						-48.9		0	0			
ļ.					1			0				
ļ.			73	9		SPT S	Sampler	0				
-								0	0			
Ł	╢╫┡	≻At El50.4 Ft., little silt			-	-50.4		_	$\vdash \vdash$			
F			70	40		OPT	Sameler.		F			
-			73	10		SPIS	Sampler	1	2			
F	11111					-51.9	ntinued)	1	_			

DRI	LLING	LOC	G (Cont. Sheet)	INSTALLA				g Desig	nation CB-JHPI	SHEET 2	JEETS]
PROJECT				Jacksonville District OF 2 SH COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL								
Jacksonville Harbor General Reevaluation Report (GRR)				State F					NAD83	MLLW		-
X = 4	-36.9 F	ATION TOP OF BORING 5.9 Ft.										
ELEV.	DEPTH	LEGEND	,207,392 CLASSIFICATION OF MATERIA	•	RÉC.	BOX OR SAMPLE	RQD OR UD		REMARK:	S BLOWS/ 0.5 FT.	N-VALUE	
					67	11		F2.4	SPT Samp	1	2	15 - - - -
		At El53.4 Ft., discontinue shell		80	12	-	-53.4	SPT Sampler	2	3	- - - -	
			≻At El55.9 Ft., trace angular shell u	ıp to 1/2"	100	13	_	-54.9	SPT Samp	2	4	- - - -
-56.4	19.5		CLAY, fat, medium plasticity, firm, tr angular shell up to 1/8", moist, 10Y greenish gray (CH)	ace 4/1 dark	100	14	-	-56.4	SPT Samp	1	1	- -20 -
					87	15	-	-57.9 -59.4	SPT Samp	1	2	- - - -
-60.9	24.0		At El59.4 Ft., discontinue shell		80	16		-60.9	SPT Samp	0 0 0	0	+ - - - -
-60.9	24.0		LIMESTONE, sandy, sparsely fossil moderately hard, slightly weathered grained, moist, 5Y 8/2 pale yellow		100	17	-	-61.3	SPT Samp	oler 50/0.4		-
-62.5	25.6 ⁷					18		<u>-62:4</u>	SPT Samp			25 - -
			NOTES: 1. USACE Jacksonville is the custo these original files. 2. Soils are field visually classified i accordance with the Unified Soils Classification System. 3. Set 54.5 ft. of 6" flush joint steel of the start of 6.	n casing					ammer w/30" drop us t spoon (1-3/8" I.D. x	ed with		7
			 4. Water depth recorded at start of operations and referenced to the tid at the Navy Fuel Station. 5. Water depth of -39.5 ft. recorded PM on 2/1/2010. Tide gage reading ft. mllw 	al station at 12:30								- -30 - - - - - - - - - - - - -
	ORM 18											- - - - - - - - - - - - - -



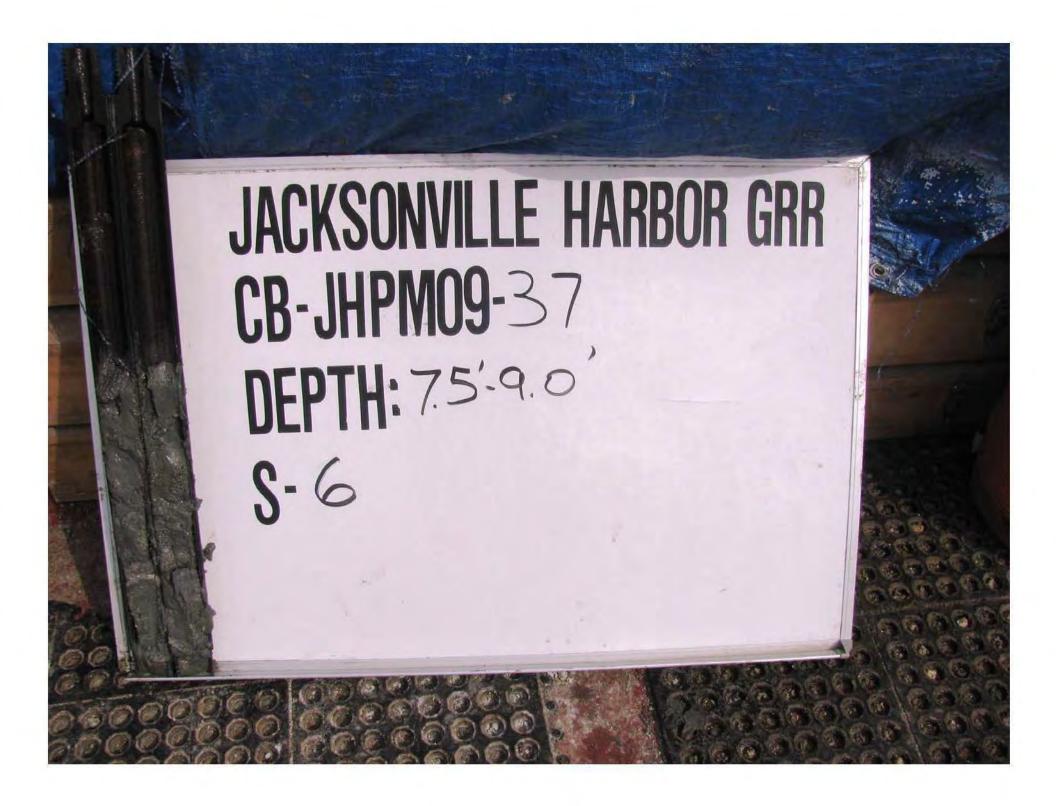


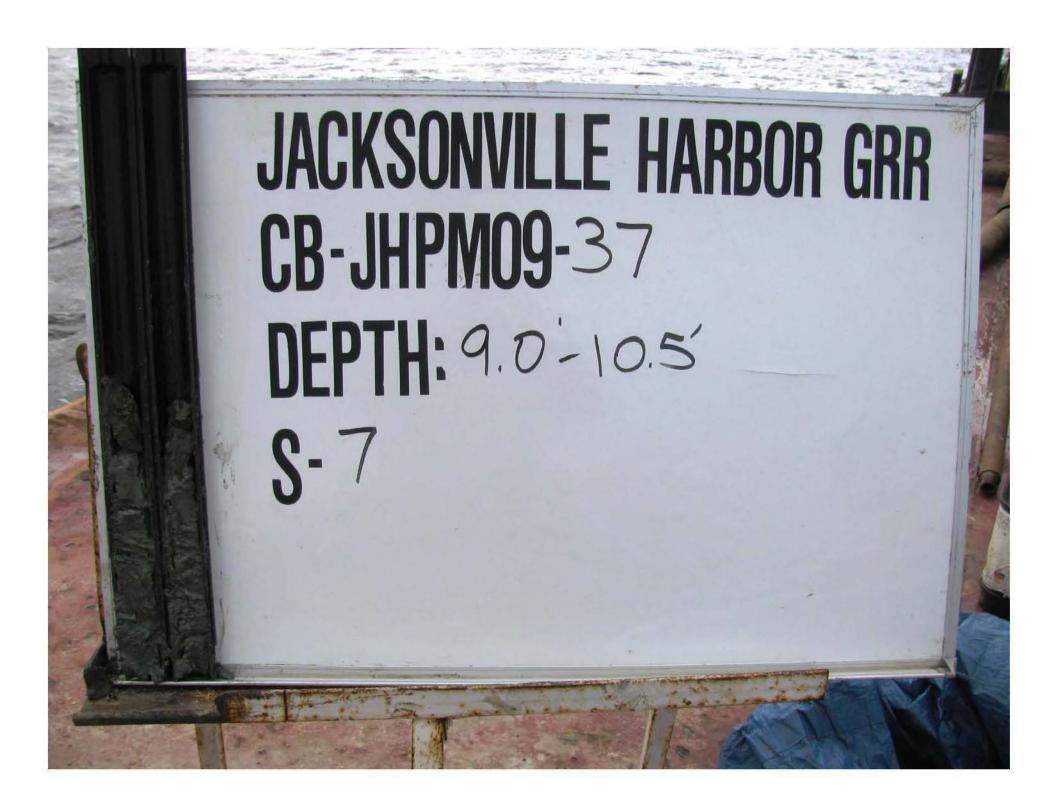


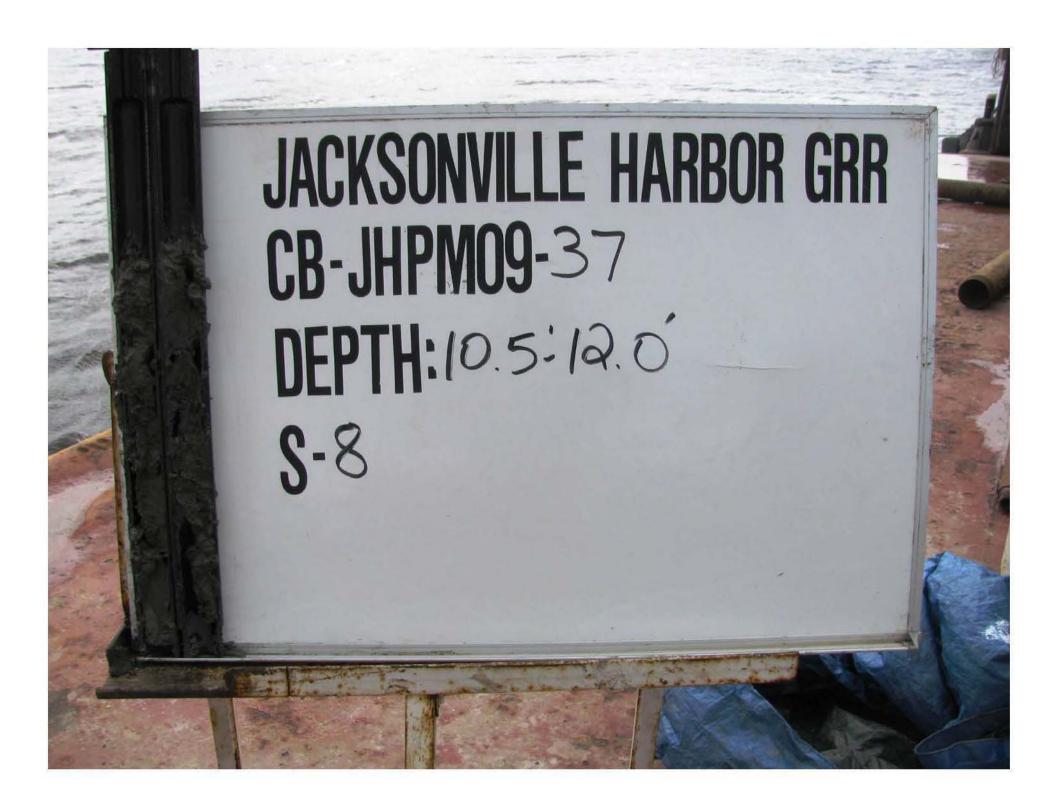


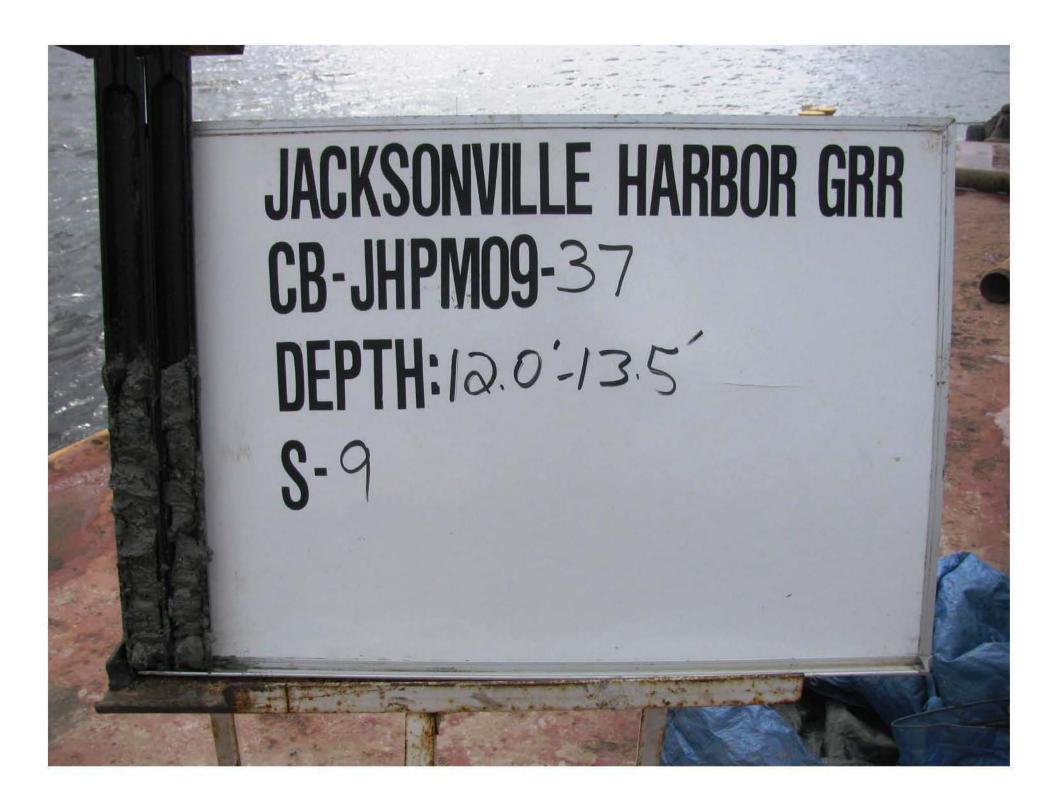


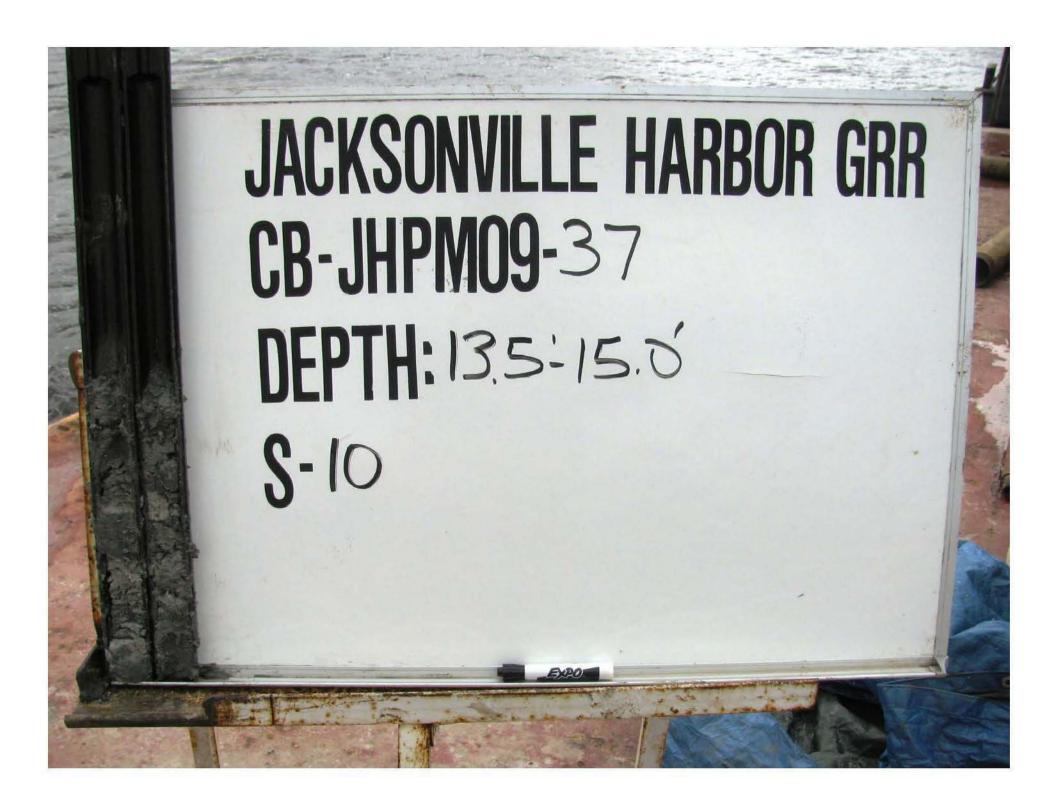


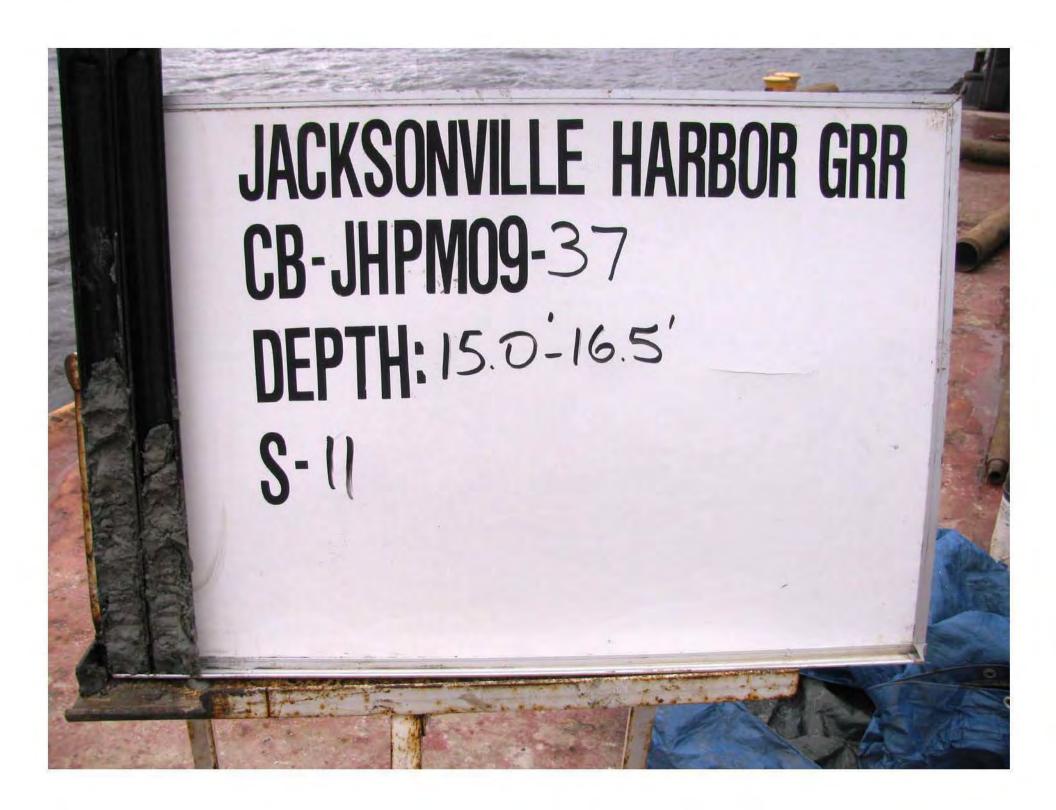




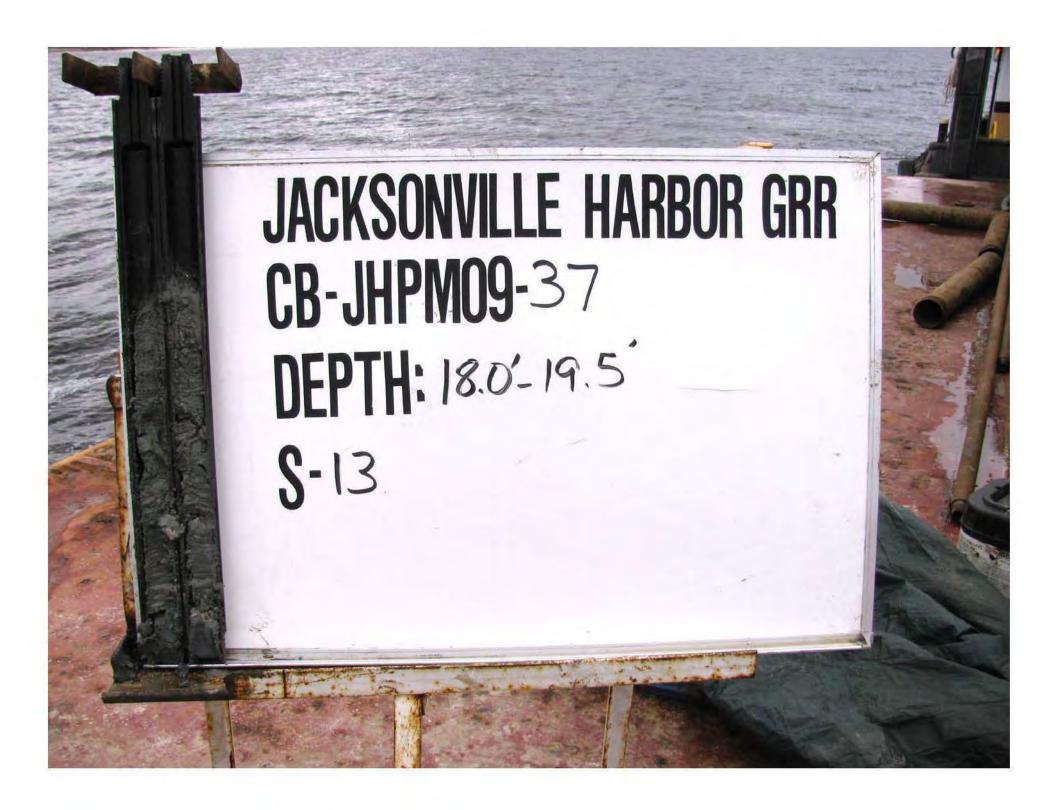


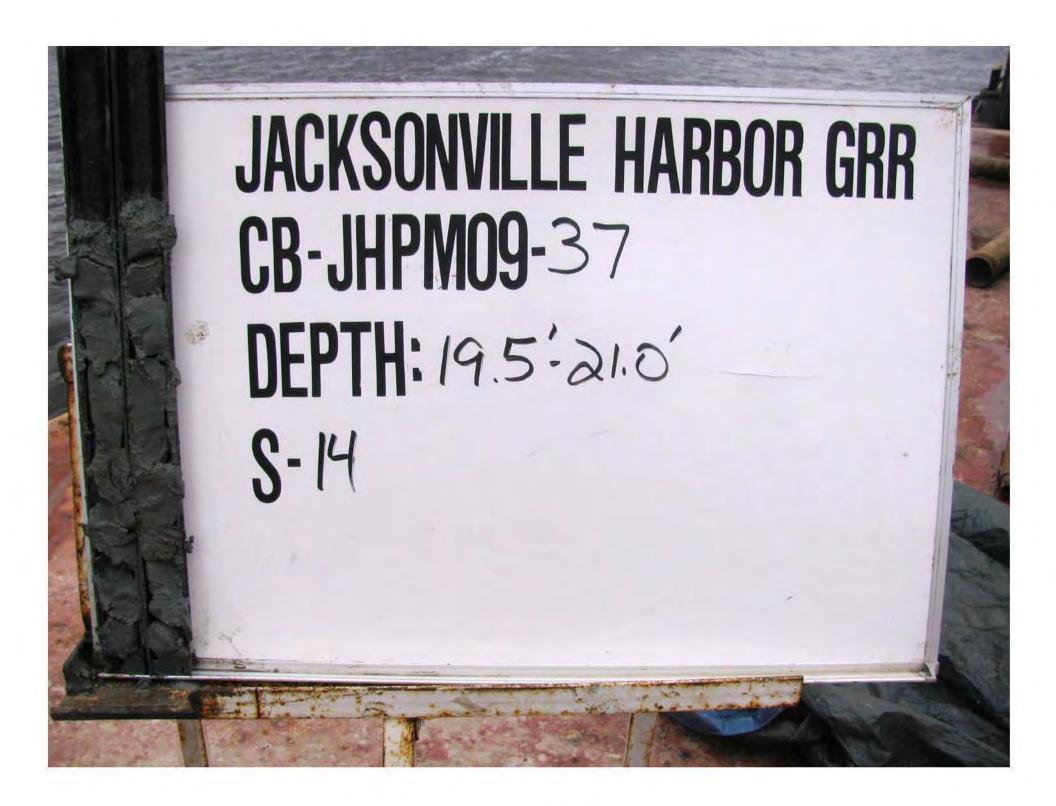




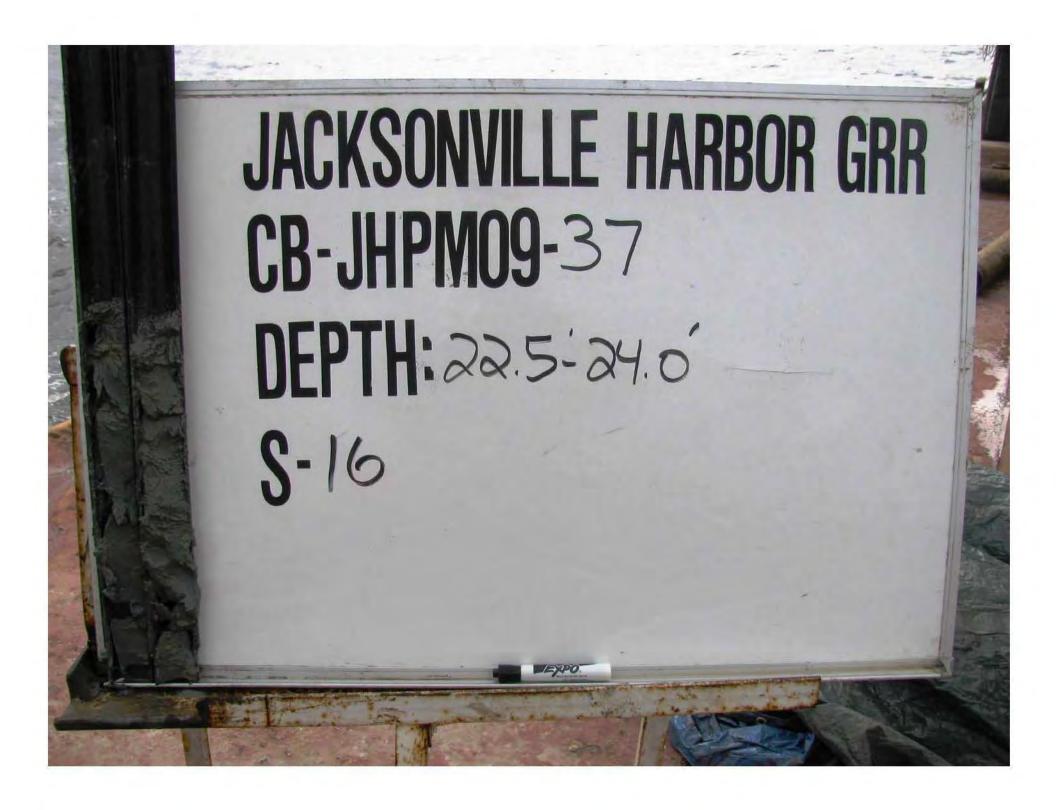




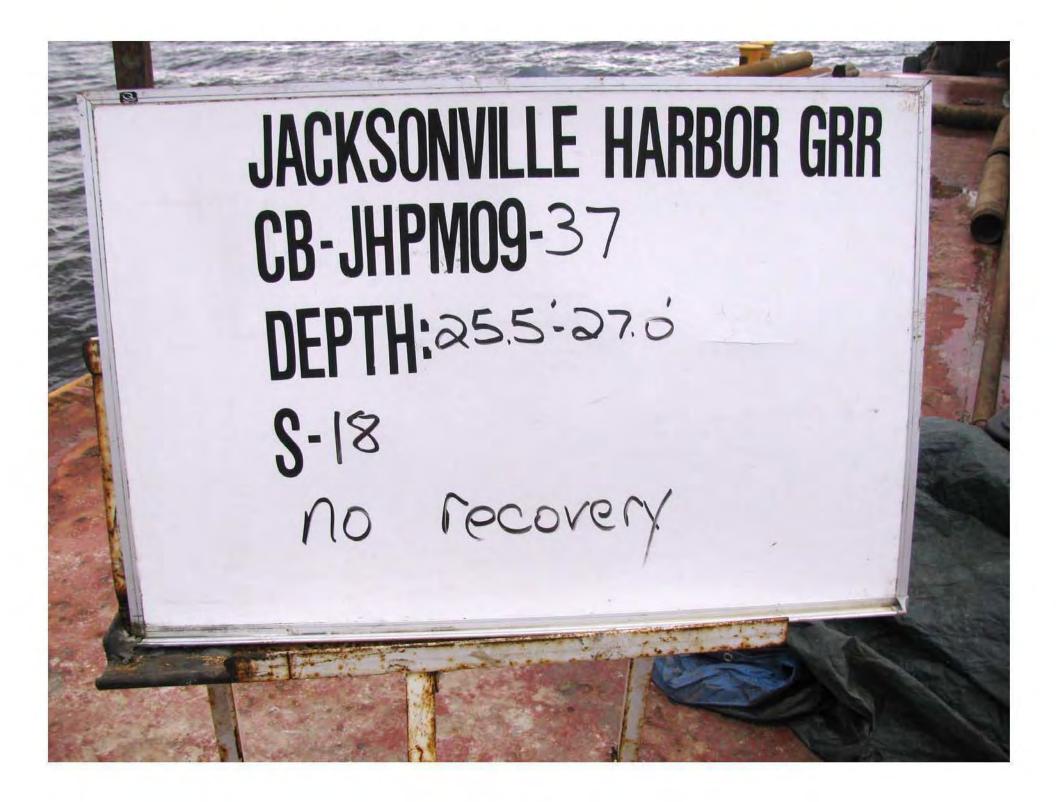










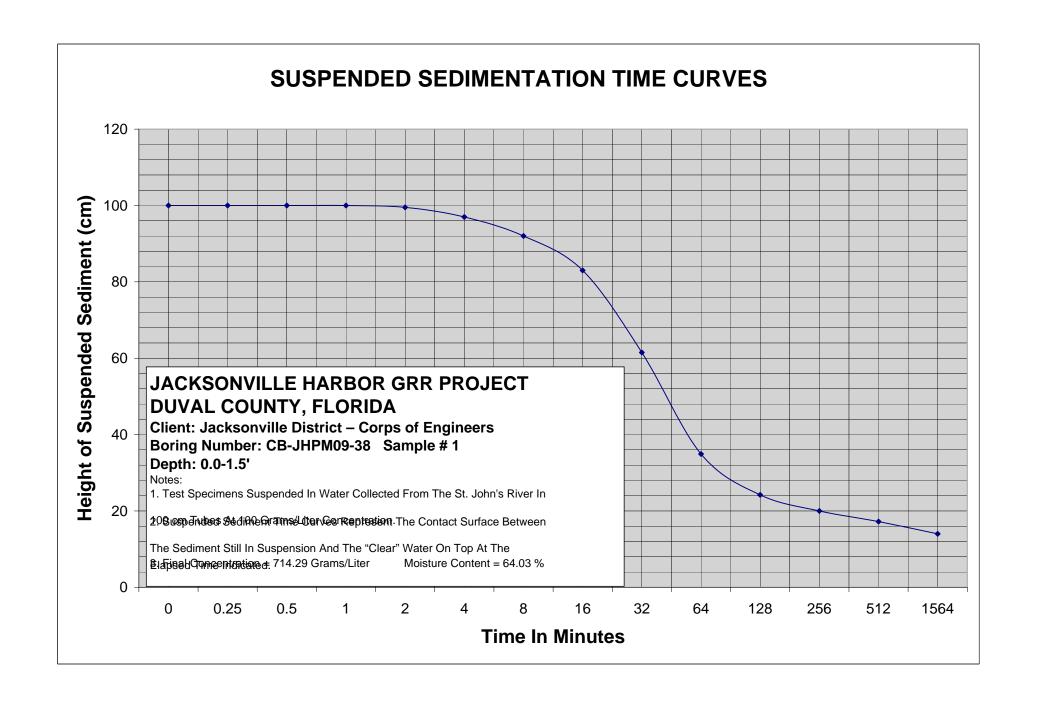


TEST CORE BORING NUMBER "CB-JHPM09-38"

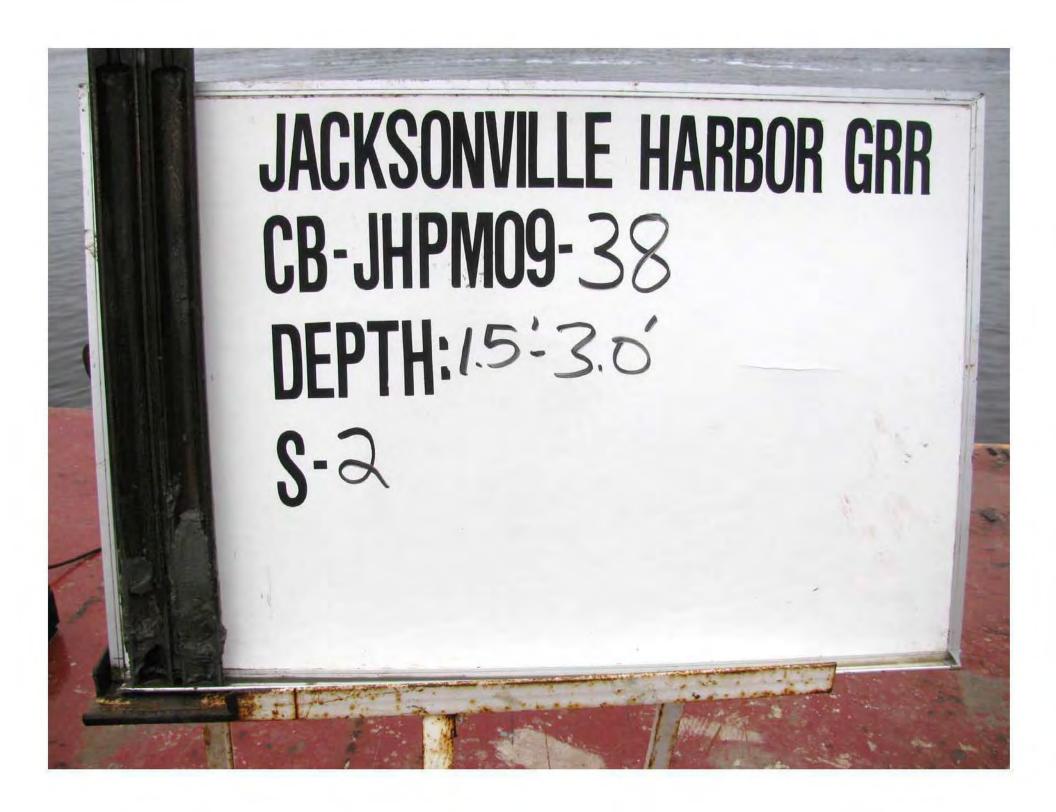
gINT Boring Log Laboratory Curves Sample Photographs

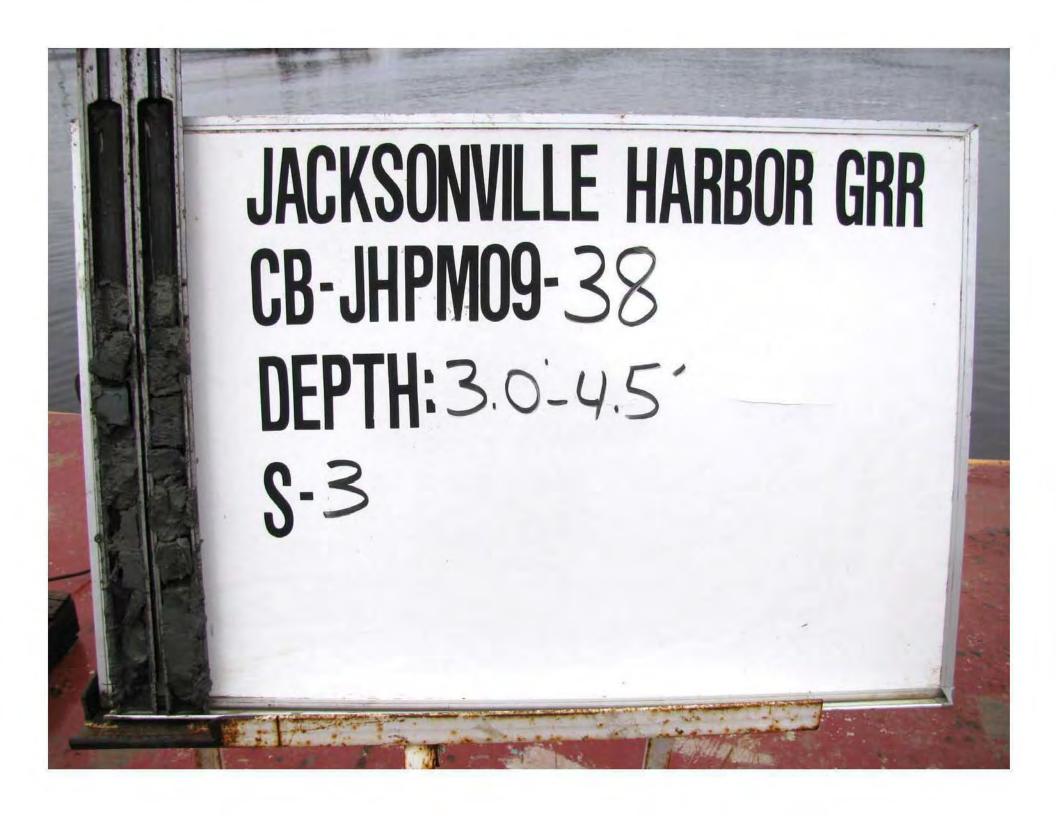
	.	DIVICION		- A			g Designation CB-JHPM0					
DRILLING I	LOG	South Atlantic	- 1	<i>ALLA</i> ackso			istrict	SHEET 1 OF 2 SHI	FFTS			
1. PROJECT					Jacksonville District OF 2 SHEET 9. SIZE AND TYPE OF BIT See Remarks							
Jacksonville	Harbor G	General Reevaluation Report (GRR)					SYSTEM/DATUM HORIZONTAL	VERTICAL				
DRUMMOND WIDENER							ne, FLE (U.S. Ft.) NAD83	MLLW				
BORING DESIGNATION LOCATION COORDINATES CB-JHPM09-38 X = 462,438 Y = 2,206,041							_	AUTO HAMME MANUAL HAM				
3. DRILLING AGEN		CONTRACTOR FILE N	10.				DISTURBED	UNDISTURBED				
		g & Testing, Inc. 2009D08	12.	TOTA	AL SA	4МРІ	16 LES	0				
4. NAME OF DRILL Marvin Stric			13.	TOTA	AL NO	UMB	BER CORE BOXES 1					
5. DIRECTION OF E		DEG. FROM BEARING	14.	ELEV	'ATIC	ON G	GROUND WATER TIDAL					
		VERTICAL	15.	15. DATE BORING STARTED COMPLETED								
6. THICKNESS OF	OVEDBUIDI	DEN N/A	16	FI FV	/ΔΤΙ	2MT	02-02-10 TOP OF BORING -43.0 Ft.	02-02-1	0			
		·	_				VERY FOR BORING 67 %					
7. DEPTH DRILLED	INTO ROC	CK N/A					AND TITLE OF INSPECTOR					
8. TOTAL DEPTH C	OF BORING	24.0 Ft.		V.	J. T	hon	npson III, Civil Engineer					
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	RÉ	%C. XX	SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE			
43.0					\top		12.0					
-43.0 0.0		LT, organic-L, nonplastic, very soft, trac		+	+	\dashv	-43.0	0				
E		ngular to subangular shell up to 1/8", wet ⁄ 4/1 dark gray(OL)		.7	1		SPT Sampler					
<u> </u>			"	<i>'</i>	.		•	0	0			
E			-	+	\dashv		-44.5	0				
-				.0	2		SPT Sampler					
-			"	` '	-		·	0	0			
-46.0 3.0	CL	_AY, fat, high plasticity, soft, few angula	r to	+	\dashv		-46.0					
F	sul	bangular fine-grained sand-sized quartz oist, organic odor, 5Y 3/2 dark olive gray	<u>z,</u>	_ ,			007.0	0				
F		oist, organic odor, 31 3/2 dark olive gray (H)	′ 4	7 ;	3		SPT Sampler		0			
47.0			⊢	+	\dashv		-47.5	0				
-47.9 - 4.9		AND, silty, mostly angular to subangular	┤.		.		007.0	0				
-	fine	e-grained sand-sized quartz, little silt, oist, organic odor, 5Y 4/2 olive gray(SN		'3 '	1		SPT Sampler		0			
-49.0 6.0	11111	_AY, lean, low plasticity, firm, trace angu	´ I	-	4		-49.0	0				
F !	to su	to subangular shell up to 1/2", moist, organic	nic					0				
<u> </u>	Odi	lor, 5Y 4/1 dark gray (CL)	10	00 !	5		SPT Sampler		2			
ļ ļ			\vdash	+	4		-50.5	1				
<u> </u>	//\\\\	El51.0 Ft., no odor					_	1				
-51.5 8.5	Y//l	AND, silty, mostly angular to subangular		00 (6		SPT Sampler		4			
į į	fine to medium-grained sa	e to medium-grained sand-sized quartz			4		-52.0	2				
ļ		le silt, moist, 5Y 4/1 dark gray (SM) El52.0 Ft., trace angular to subangula	ar					2				
<u> </u>	∐∐∏ she	nell up to 1/8", 5Y 4/1 dark gray	6	i0 1	7		SPT Sampler		5			
ļ ļ	<u> </u>			\bot	4		-53.5	2				
<u> </u>	<u> </u>							2				
į į	<u> </u>		6	57 8	8		SPT Sampler		5			
<u> </u>	+ <u> </u> +			\perp	_		-55.0	2				
<u> </u>	 							3				
E	+ + 		6	60 9	9		SPT Sampler	1	2			
L !	 						-56.5	1				
L	11111				٦			2				
-												
			7	'3 1	0		SPT Sampler	2	6			

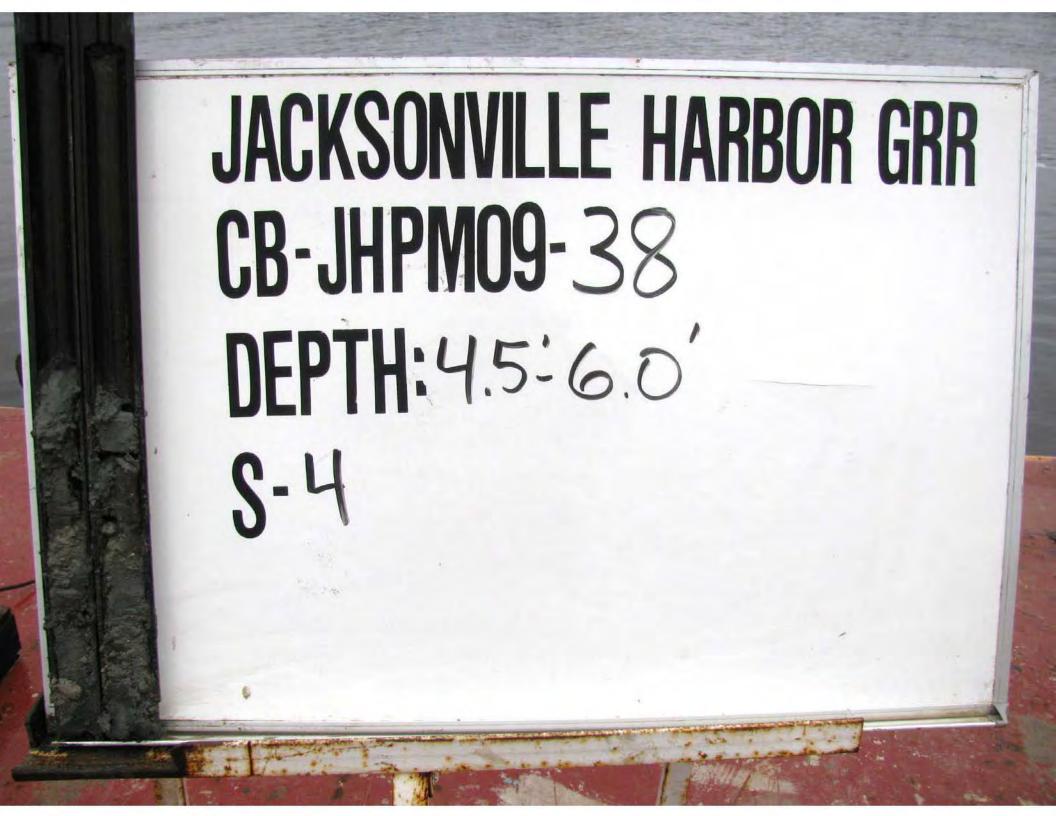
DRI	ILLING	LOC	G (Cont. Sheet)	INSTALLA Jackso				g Designation CB-JHPIV	SHEET 2		
PROJECT			COORDINA				TUM HORIZONTAL	VERTICAL	JIILL 13	1	
Jacksonville Harbor General Reevaluation Report (GRR)			State F				<u> </u>	MLLW		4	
LOCATION COORDINATES $X = 462,438 Y = 2,206,041$			-43.0 F		OF E	BORIN	'G				
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIA		REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE	1
			At El58.0 Ft., organic odor		67	11		SPT Sample	1 er1	4	15 - - -
			Nat El59.5 Ft., discontinue shell Nat El60.0 Ft., 5Y 6/1 gray			40	-	-59.5	3 2		<u> </u> - -
					60	12	-	SPT Sample	er 1 3	4	<u>-</u>
					60	13		SPT Sample		7	-
		At El64.0 Ft., 5Y 5/1 gray			60	14		SPT Sample	2 er 4 4	8	-20
			`^At El64.0 Ft., 5Y 5/1 gray		67	15		-64.0 SPT Sample	2		+
				87	16		-65.5 SPT Sample	3 3 er 3		<u> </u> -	
-67.0	24.0				01	10		-67.0	3	6	-
			NOTES: 1. USACE Jacksonville is the custo these original files. 2. Soils are field visually classified i accordance with the Unified Soils					140# hammer w/30" drop use 2.0' split spoon (1-3/8" I.D. x 2	d with 2" O.D.).		-25 - -25
			Classification System. 3. Set 57.5 ft. of 6" flush joint steel	_							- - - -
			 Water depth recorded at start of operations and referenced to the tid at the Navy Fuel Facility. 	al station							- - -
			5. Water depth of -43.5 ft. recorded AM on 2/2/2010. Tide gage reading ft. mllw	at 08:15 of +0.5							- - - -30
											- - -
											- - -
											- - -
											<u>-</u> - - - 35

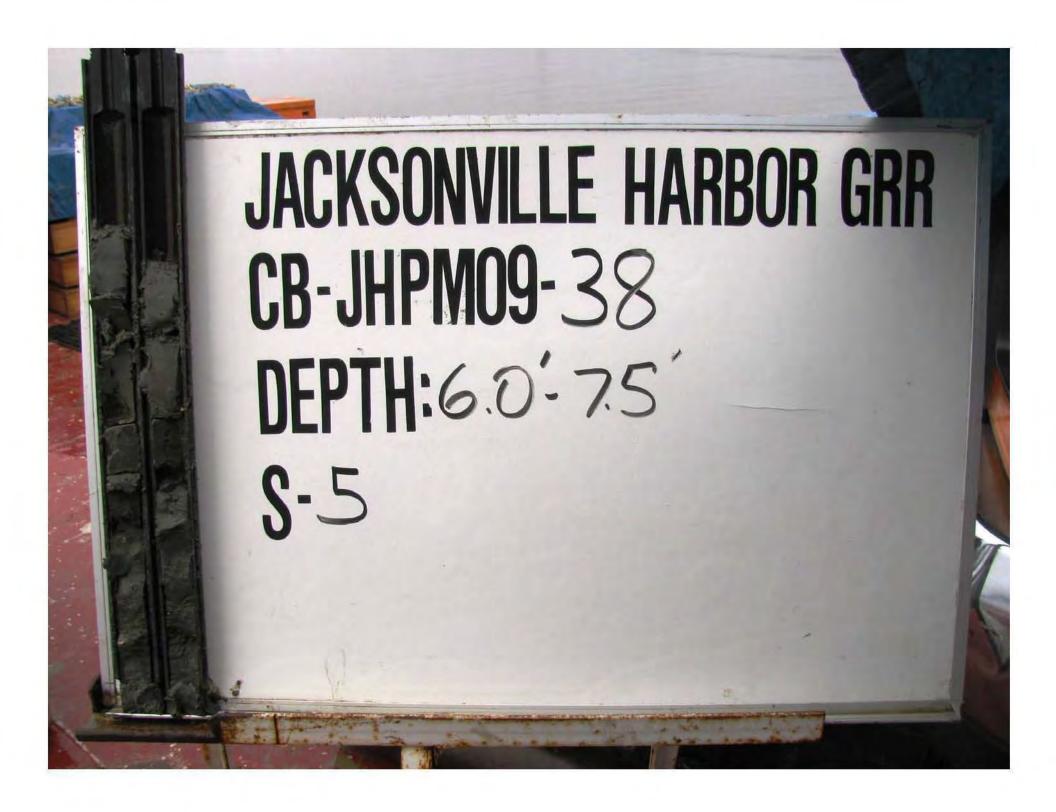


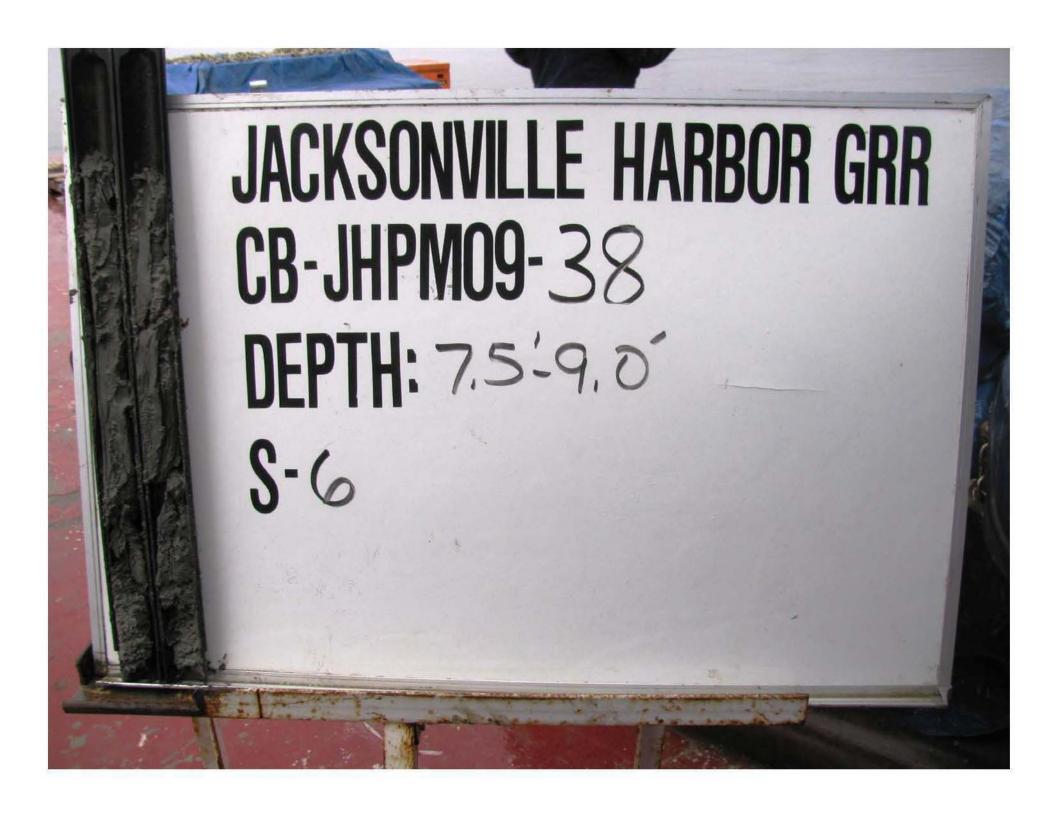


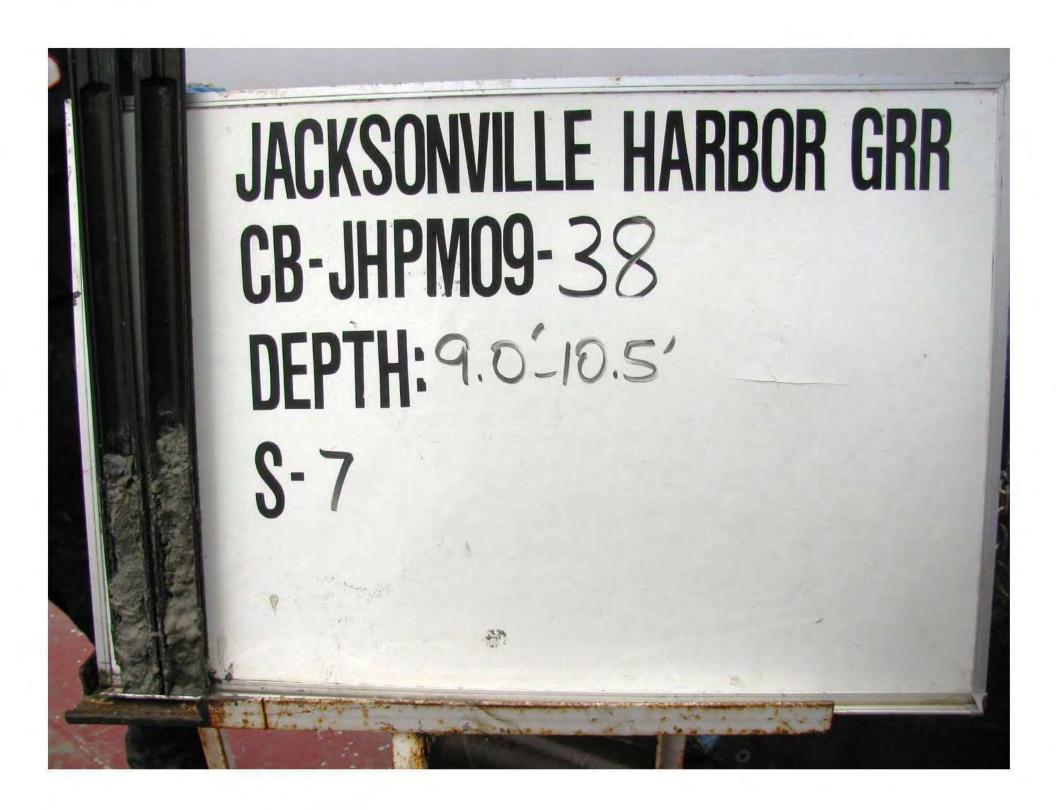


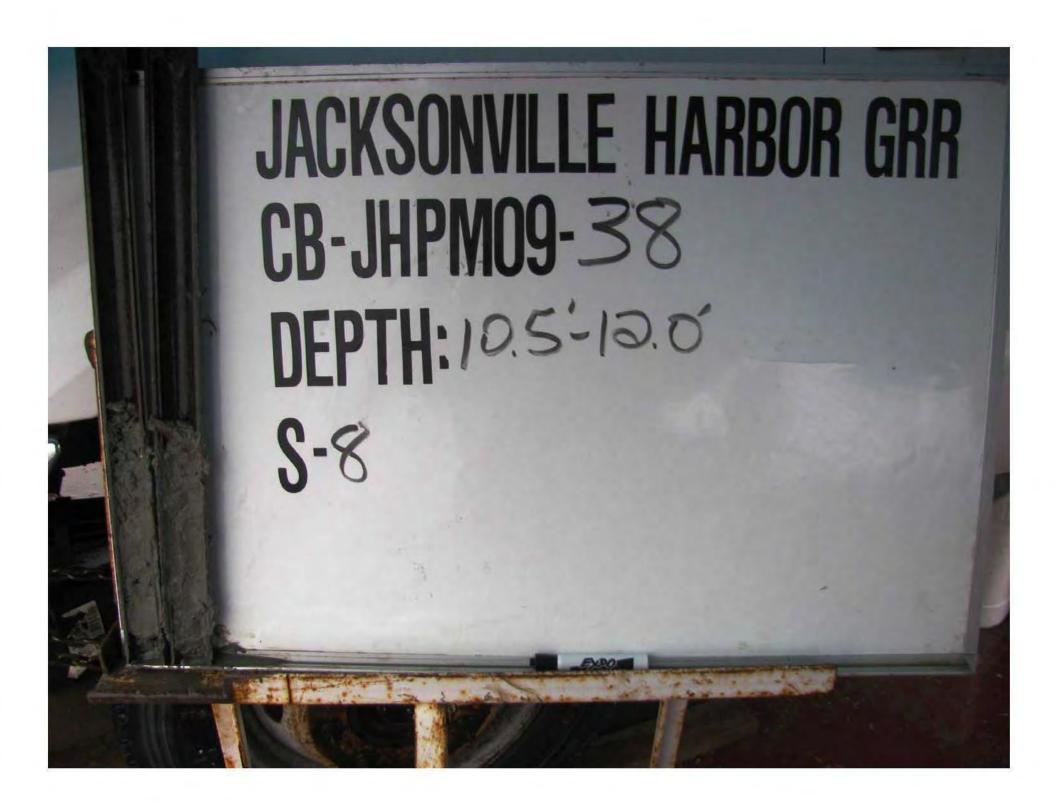


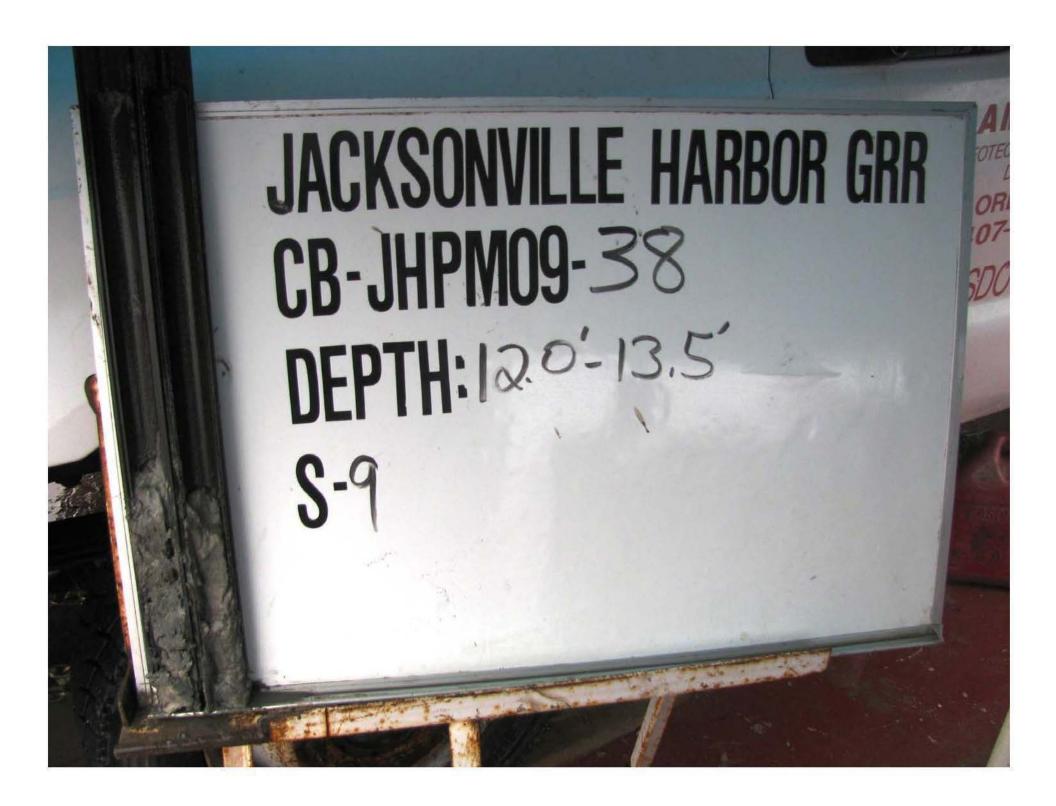


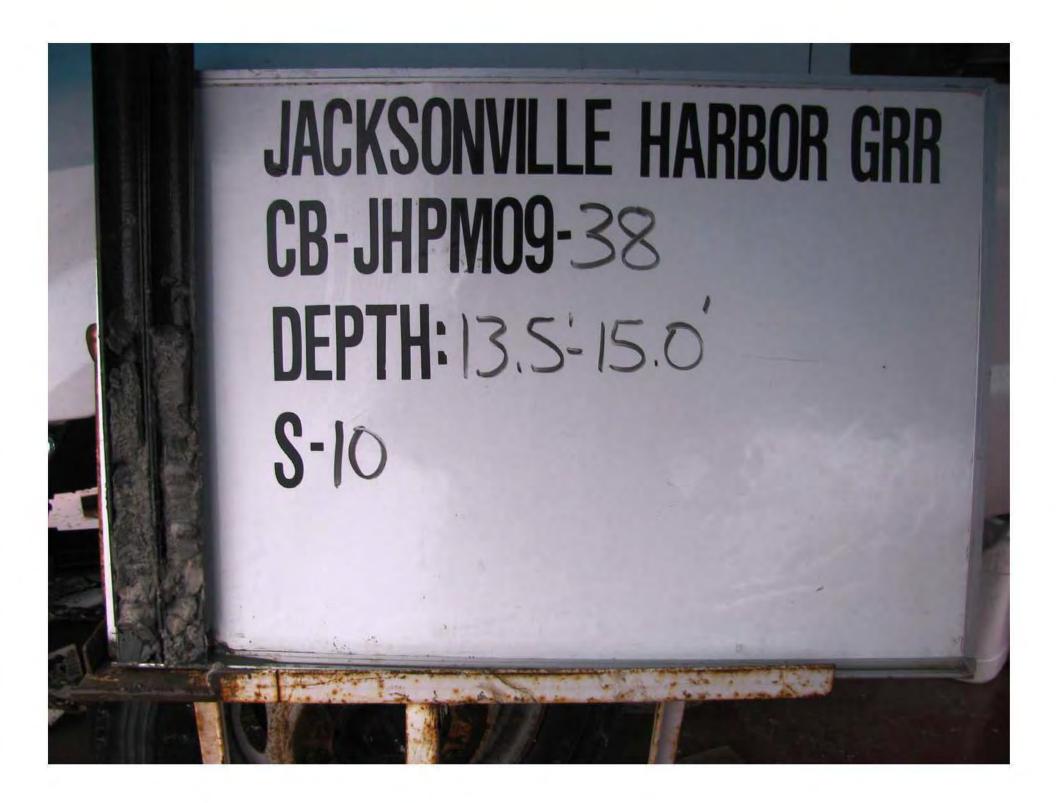


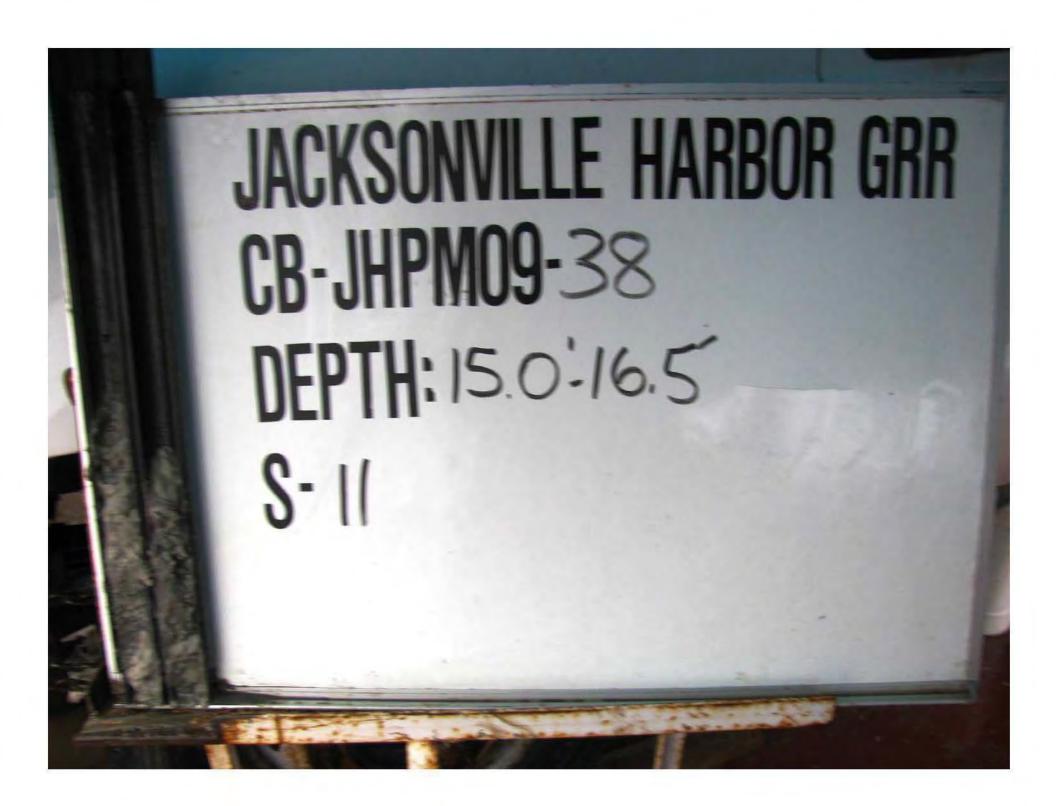


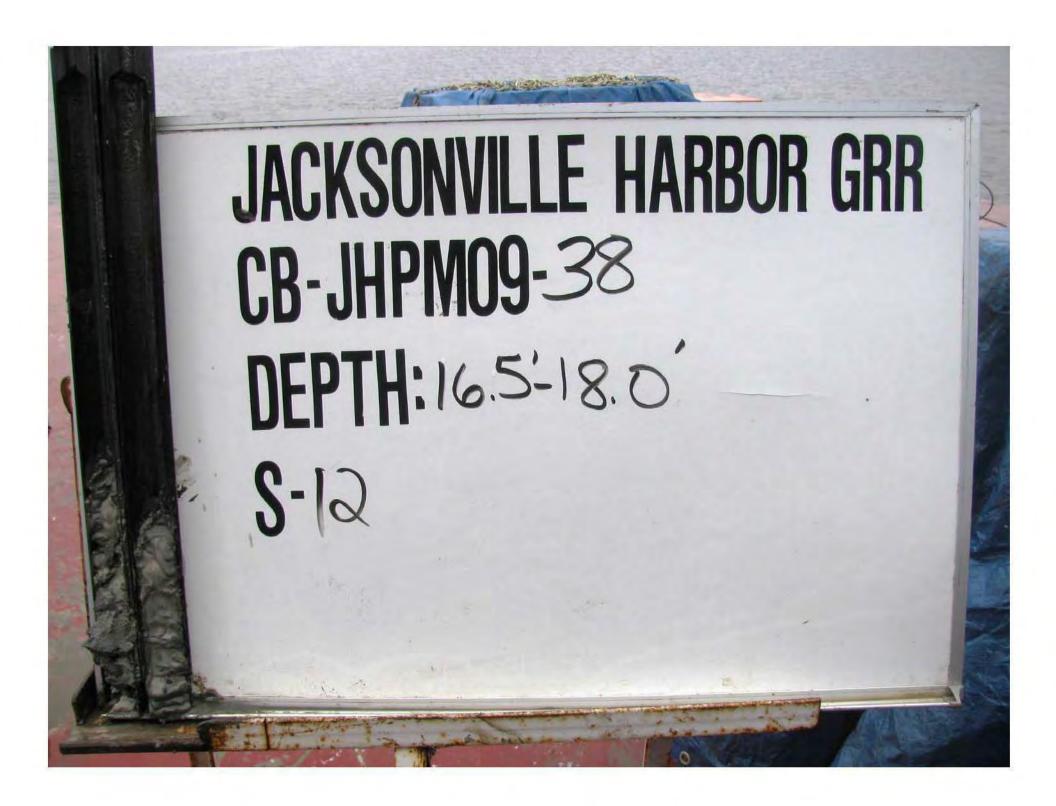


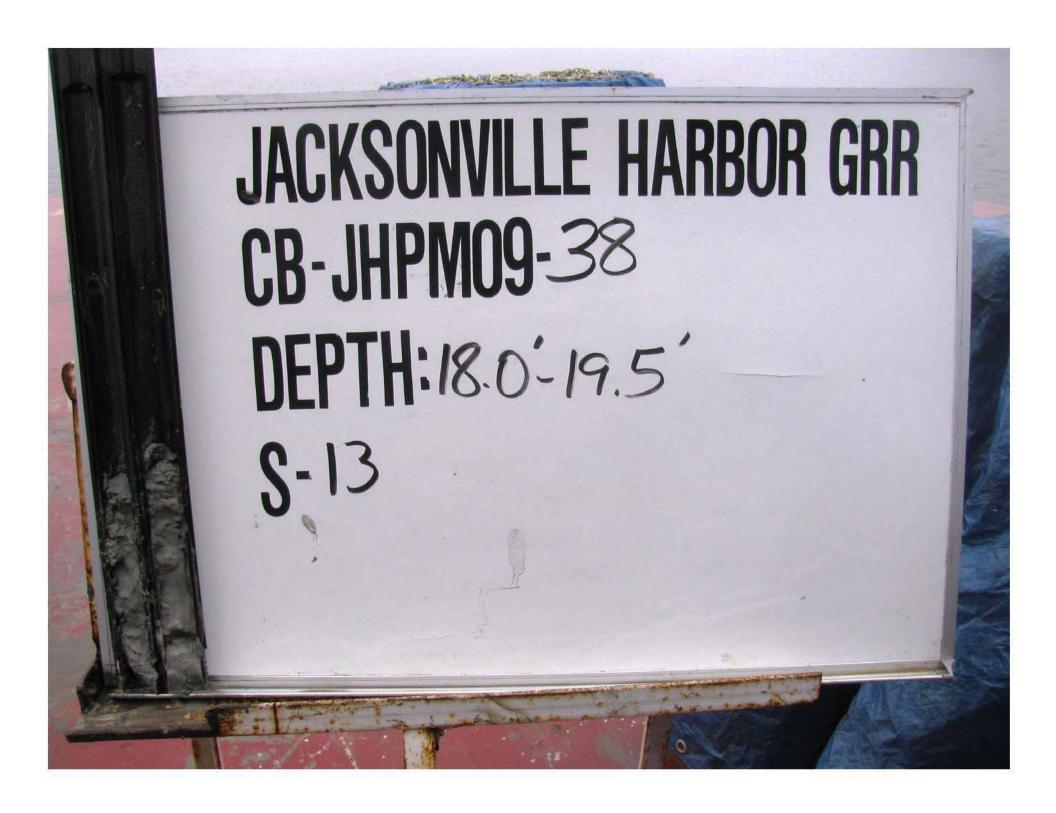


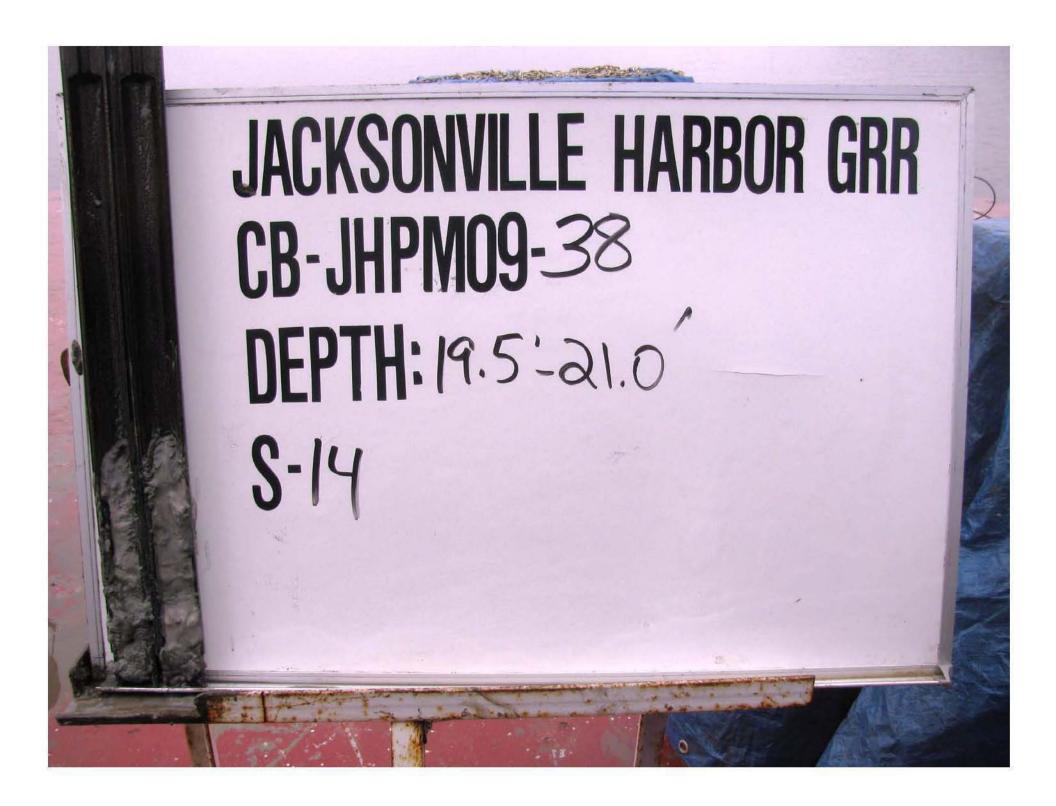


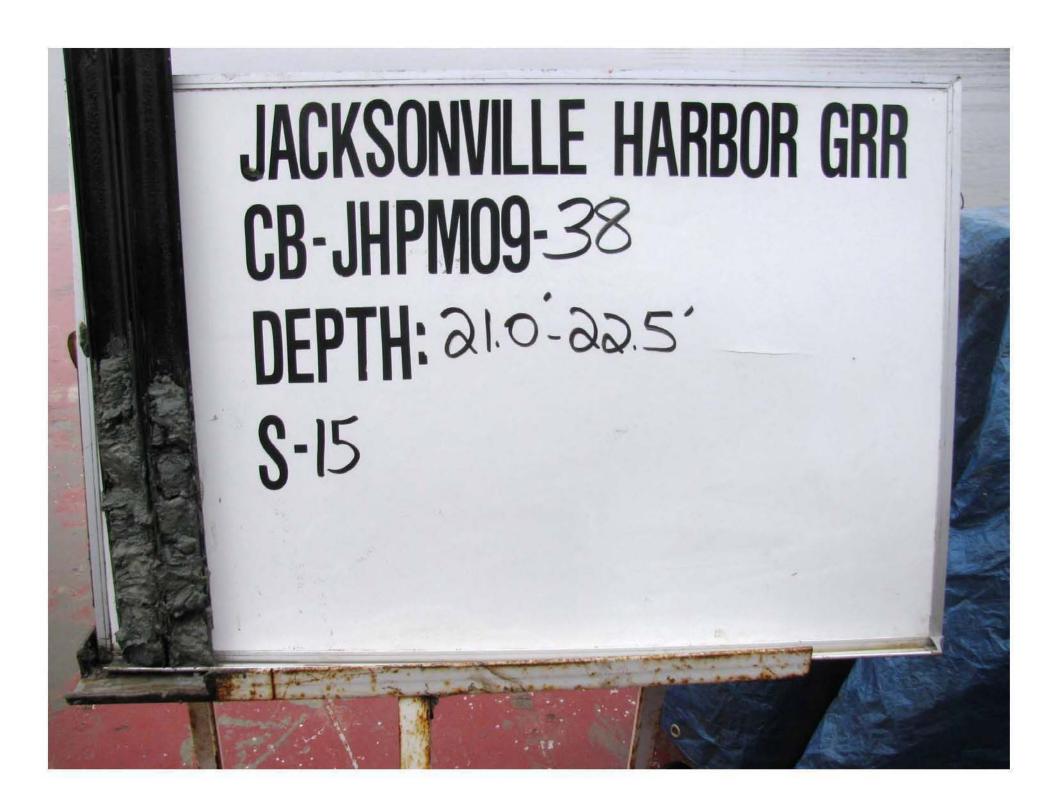


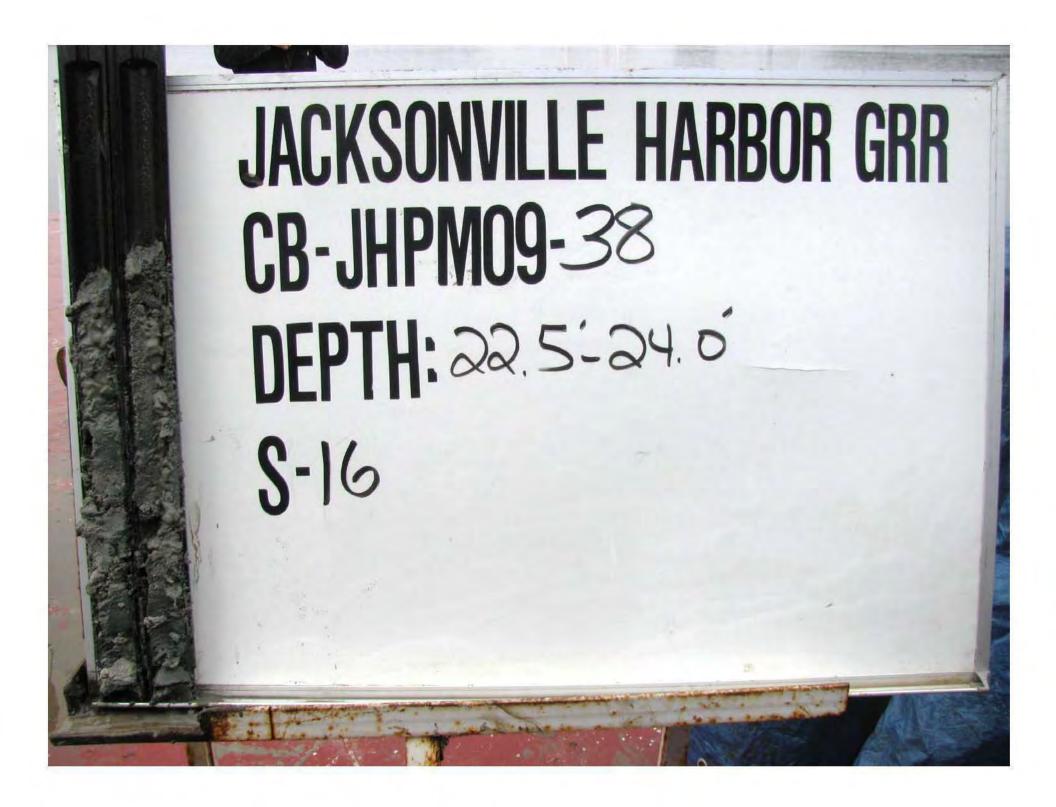










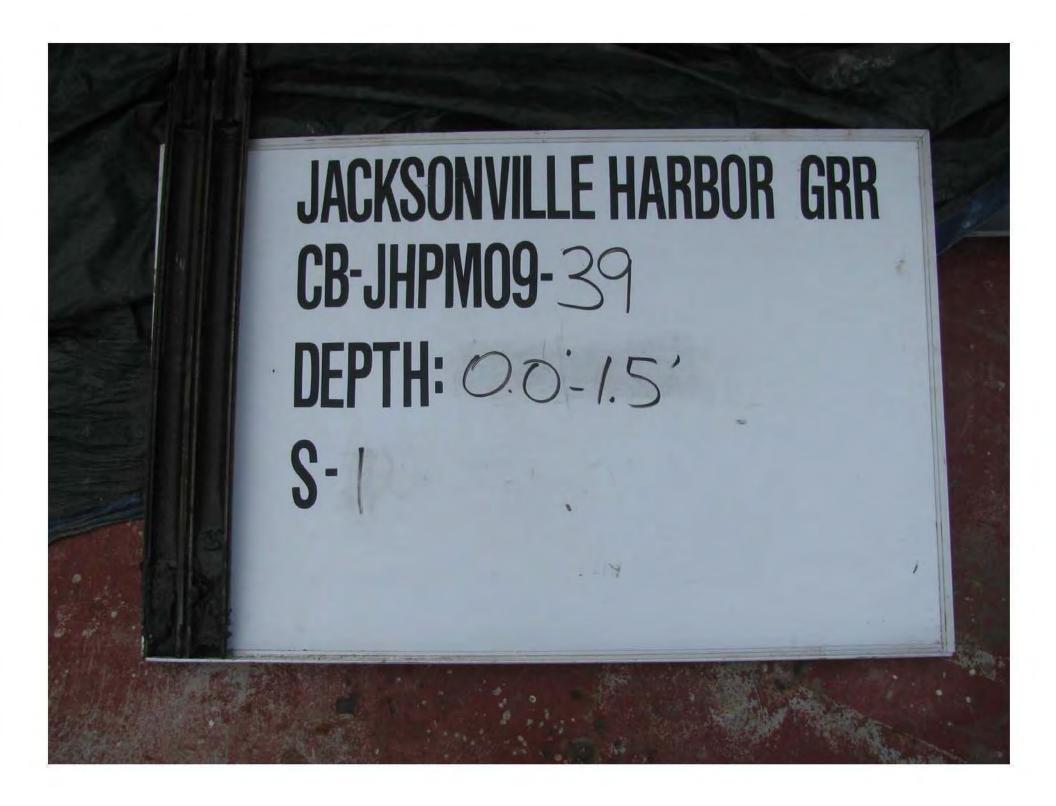


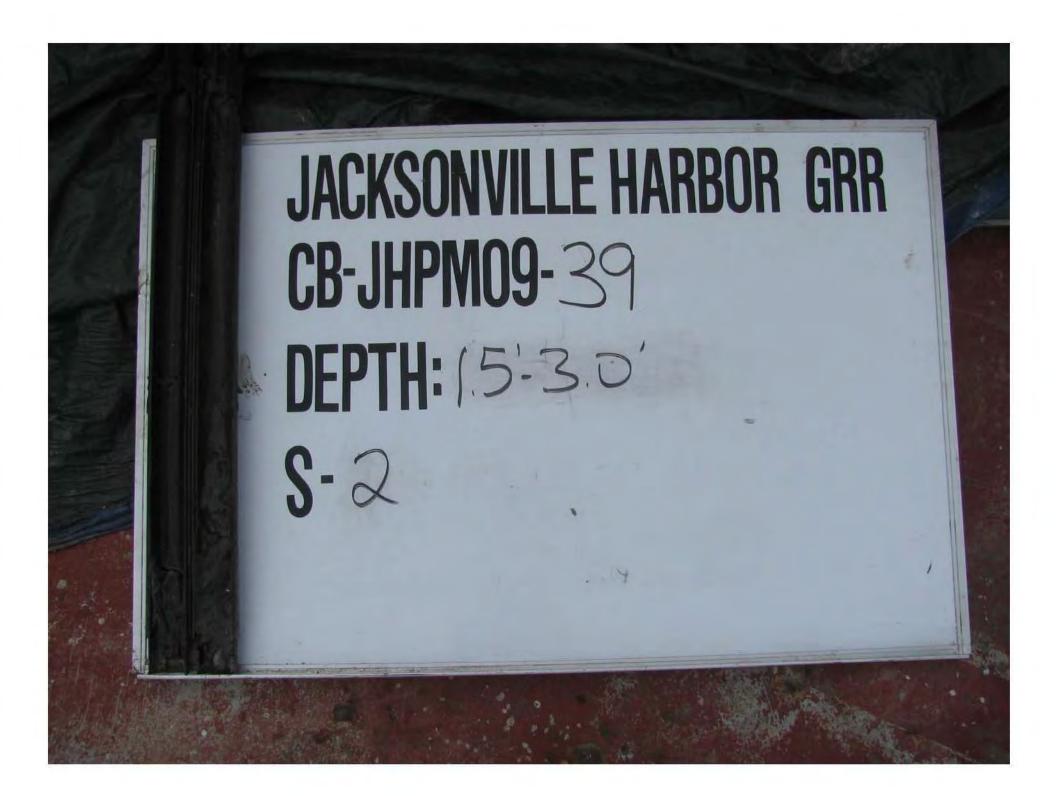
TEST CORE BORING NUMBER "CB-JHPM09-39"

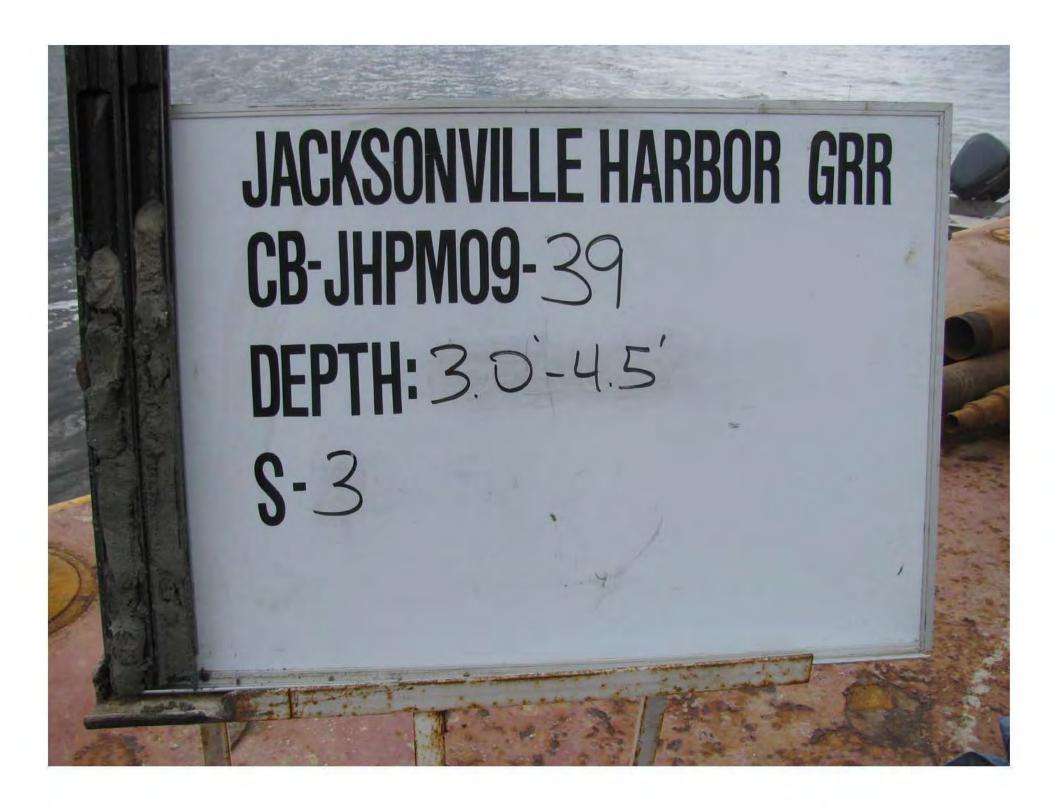
gINT Boring Log Laboratory Curves Sample Photographs

1	DIVISION	INICTA			g Designation CB-JHPMOS			
DRILLING LOG	DIVISION South Atlantic	INSTAL Jack			istrict	SHEET 1 OF 2 SHEETS		
1. PROJECT		Jacksonville District OF 2 SHEETS 9. SIZE AND TYPE OF BIT See Remarks						
Jacksonville Harbor (General Reevaluation Report (GRR)	10. CC	ORDI	INATE	SYSTEM/DATUM HORIZONTAL	VERTICAL		
DRUMMOND WIDEN					ne, FLE (U.S. Ft.) NAD83	MLLW		
2. BORING DESIGNATION CB-JHPM09-39	11. MANUFACTURER'S DESIGNATION OF DRILL AUTO HAMMER Diedrich D-50 Truckrig MANUAL HAMMER							
3. DRILLING AGENCY Challenge Engineerin	X = 466,081 Y = 2,208,167 CONTRACTOR FILE NO. 2009D08	12. TC			DISTURBED	INDISTURBED (UD)		
4. NAME OF DRILLER	· · · · · · · · · · · · · · · · · · ·	13. TC	TAL	NUMB	ER CORE BOXES 0			
Tim Clarkson 5. DIRECTION OF BORING	DEG. FROM BEARING	14. EL	EVAT	ION G	GROUND WATER TIDAL			
Ø VERTICAL ☐ INCLINED	VERTICAL	15. DA	TE B	ORING	STARTED 01-31-10	COMPLETED 01-31-10		
6. THICKNESS OF OVERBUR	RDEN N/A	16. EL	EVA7	TON T	TOP OF BORING -42.4 Ft.			
7. DEPTH DRILLED INTO RO	CK N/A	17. TC	TAL I	RECO	VERY FOR BORING 82 %			
8. TOTAL DEPTH OF BORING					AND TITLE OF INSPECTOR npson III, Civil Engineer			
ELEV. DEPTH B	CLASSIFICATION OF MATERIALS	ĸ. REC.	BOX OR SAMPLE	ROD OR UD	REMARKS	BLOWS/ 0.5 FT. N-VALUE		
-42.4 0.0					12.1			
[] [] [] S/	AND, silty, mostly angular to subangular				-42.4	0		
	ne-grained sand-sized quartz, little silt, wet, Y 2.5/1 black (SM)	27	1		SPT Sampler	0		
F [[]]		-			•	0 0		
	t El43.9 Ft., trace rounded coarse				-43.9	0		
├ gr	ravel-sized quartz, 5Y 3/2 dark olive gray	47	2		SPT Sampler	3		
E Hill		"'	_		·	5 8		
E IIIIka	t El45.4 Ft., trace rounded fine				-45.4			
	avel-sized quartz	400	_		007.0	3		
F HHL	t El46.4 Ft., discontinue rounded fine	100	3		SPT Sampler	1 2		
	ravel-sized quartz, 5Y 5/1 gray				-46.9	1		
<u> </u>						3		
<u> </u>	t El47.9 Ft., few clay	80	4		SPT Sampler	1 3		
	. ∟→1.3 i, iew Clay				-48.4	2		
-48.7 6.3	MESTONE, sandy, non-fossiliferous, very	\dashv				1		
	oft, highly weathered, fine grained, Y 8/1 white	60	5		SPT Sampler	2 5		
┣ <u></u>					-49.9	3 50/0.1'		
F #1++1 ^\	t El49.9 Ft., moderately hard, slightly eathered, solid		_6_		-50.0 SPT Sampler	30/0.1		
	t El52.4 Ft., soft	98	Run #1	RQD 57	4 x 5-1/2" Diamond Impre DT = 6 mins HP = 300 psi DFR = 20 %	gnated Bit		
	t El55.4 Ft., moderately hard	100	Run #2	RQD 64	-54.9 4 x 5-1/2" Diamond Impre DT = 5 mins HP = 300 psi DFR = 20 %	gnated Bit		
					(Continued)			

DRILLI	ING	LO	G (Cont. Sheet)	INSTALLA Jackso		Distr	ict	-	SHEET 2 OF 2 SH	HEETS
PROJECT				COORDIN				UM HORIZONTAL	VERTICAL	
Jacksonville Harbor General Reevaluation Report (GRR)			State I				<u> </u>	MLLW		
LOCATION COORDINATES $X = 466,081 Y = 2,208,167$		-42.4 F		OF E	BORIN	G				
X = 466,0	081	_	2,208,167	-42.41	-τ. Τ	γШ			· .	Ш
ELEV. DE	EPTH	LEGEND	CLASSIFICATION OF MATERIA	ALS	ĸĚC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-57.9 15	5.5		SAND, poorly-graded with silt, most angular to subangular fine to medium-grained sand-sized quartz moist, moderate cementation, 5Y 7 gray (SP-SM)	, few silt,	100	Run # 2	RQD 64	4 x 5-1/2" Diamond Imp DT = 5 mins -58.9 HP = 300 ps DFR = 20 %	S Si	
			gray (Or -OW)		67	7		SPT Sample		32
		<u> :: </u>			-			-60.4	16	
		 :			93	8		SPT Sample		1
		:			93	°			16	31
<u>-61.9 19</u>	5.5		NOTES: 1. USACE Jacksonville is the cust these original files. 2. Soils are field visually classified accordance with the Unified Soils Classification System. 3. Set 55.5 ft. of 6" flush joint steel 4. Water depth recorded at start of operations and referenced to the tirat the Navy Fuel Facility. 5. Water depth of -45.0 ft. recorde AM on 1/31/2010. Tide gage readin ft. mllw 6. Compressive Strength Test of FA t Elevation -50.1' to -50.6' = 664 F	casing dilling dal station d at 11:50 ng of +2.6				140# hammer w/30" drop used 2.0' split spoon (1-3/8" I.D. x 2 Abbreviations: DT = Drill Time. HP = Hydraulic Pressure. DFR = Drill Fluid Return.	d with " O.D.).	

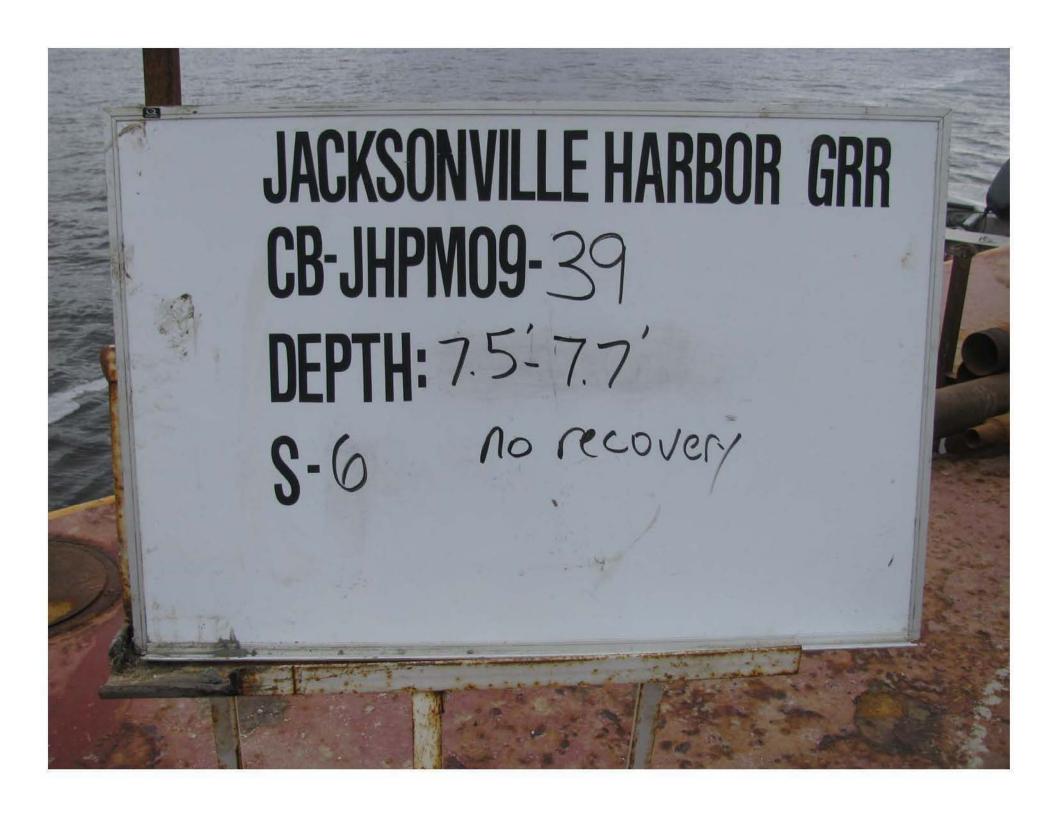


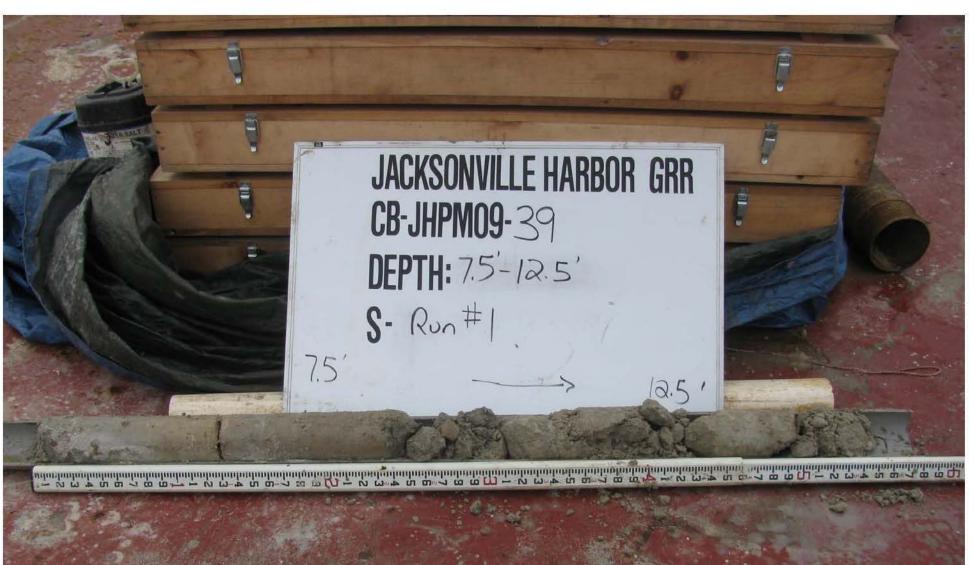


















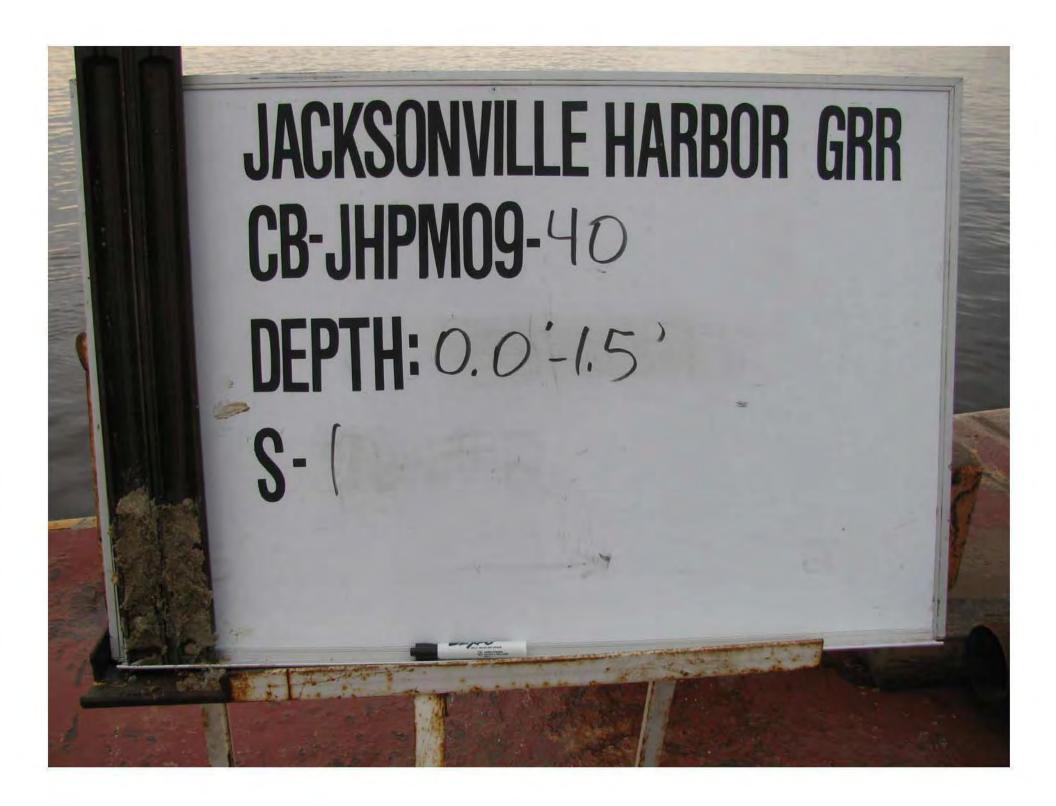


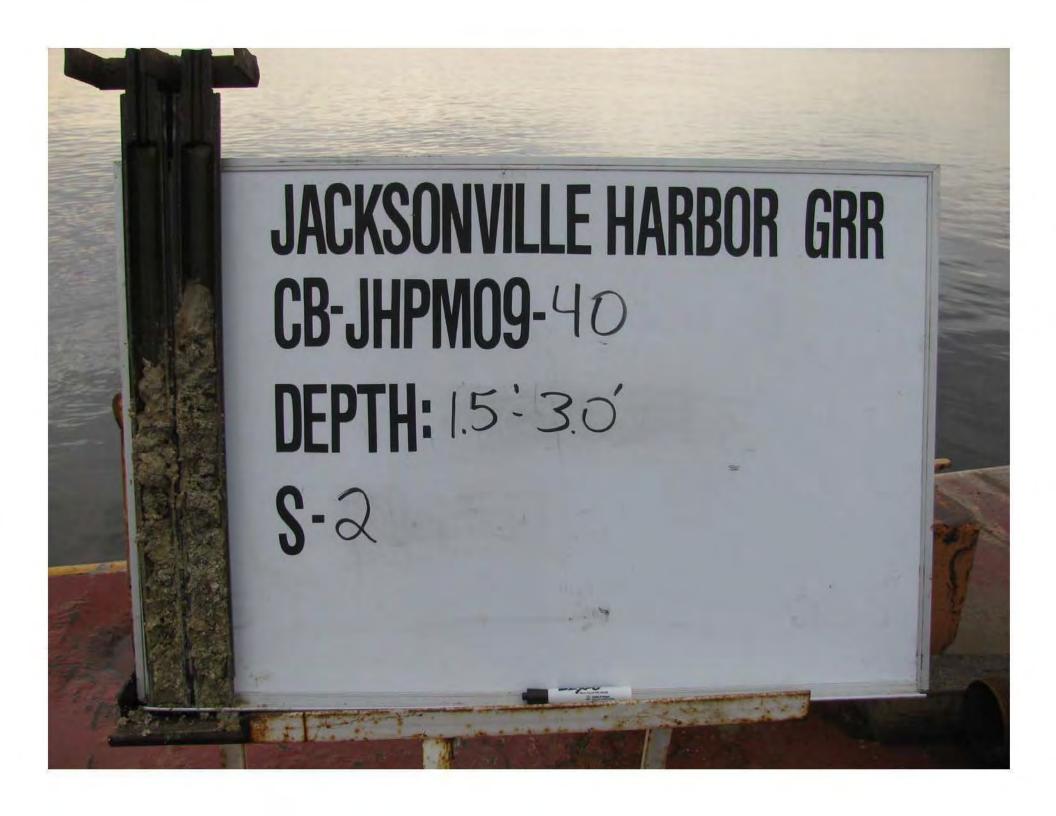
TEST CORE BORING NUMBER "CB-JHPM09-40"

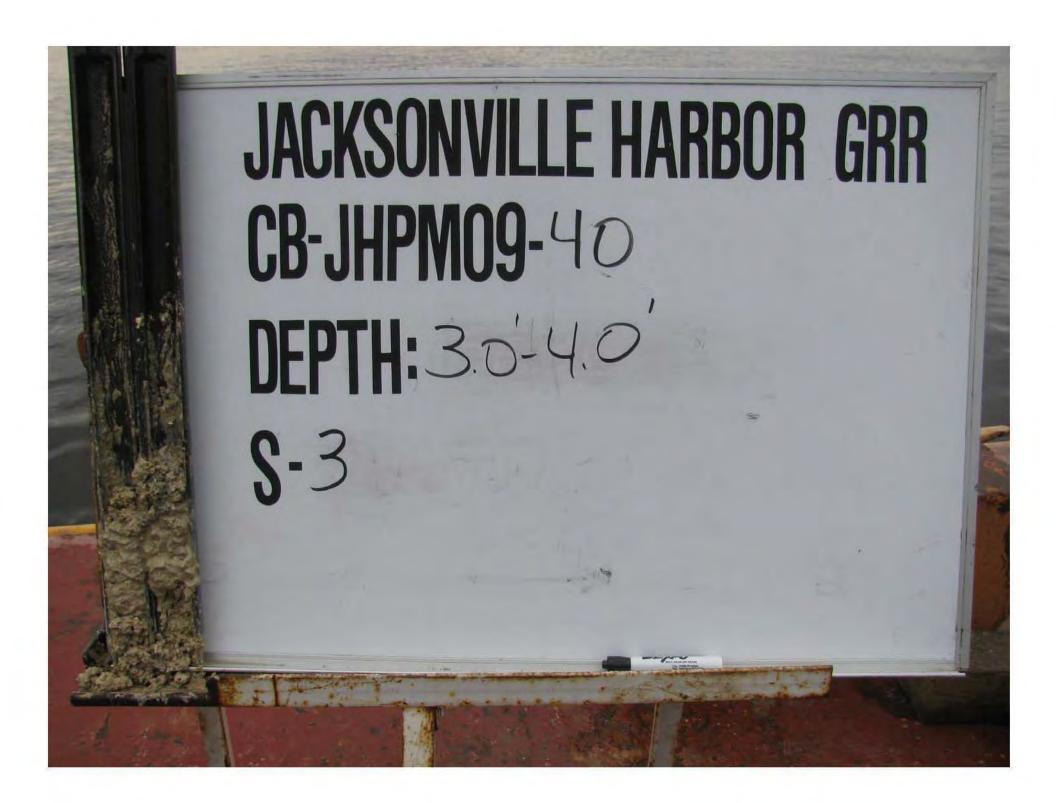
gINT Boring Log Laboratory Curves Sample Photographs

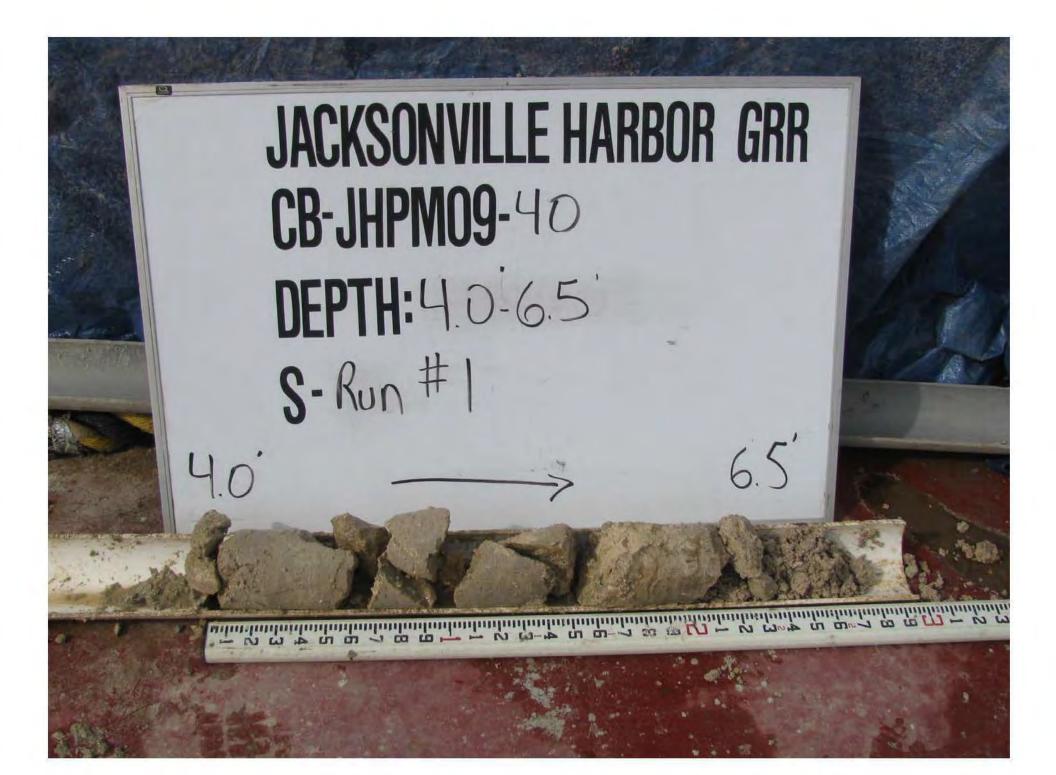
							g Designation	CB-JHPM09		
DRILLING LO	G DIVIS		//		LATI		intriot		SHEET 1	IEEE C
1. PROJECT	So	outh Atlantic		Jacksonville District OF 2 SHEE 9. SIZE AND TYPE OF BIT See Remarks						
	hor Gener	al Reevaluation Report (GRR)					SYSTEM/DATUM	HORIZONTAL	i VERTICAL	
BROWARD WIE		ai Neevaluation Nepolt (ONN)		,			ne, FLE (U.S. Ft.)		MLLW	
2. BORING DESIGNATI		LOCATION COORDINATES	1:	1. M			RER'S DESIGNATIO		AUTO HAMME	ER
CB-JHPM09-40		X = 469,922 Y = 2,210,1	183		Died	lrich D	0-50 Truckrig		ΛΑΝUAL HAN	
3. DRILLING AGENCY Challenge Engir	eering & T	contractor file 2009D08	E NO. 12	2. TC	DTAL .	SAMPI	LES	OISTURBED U	<i>NDISTURBEL</i> 0	O (UD)
1. NAME OF DRILLER			13	3. TC	TAL I	NUMB	ER CORE BOXES	0		
Tim Clarkson 5. DIRECTION OF BORI			12	4. EL	.EVA7	TION G	GROUND WATER	TIDAL		
S. DIRECTION OF BORI	VG	DEG. FROM BEARING VERTICAL	15	5. DA	ATE B	ORING	3	STARTED 01-29-10	01-29-	
5. THICKNESS OF OVE	RBURDEN	N/A	10	5. <i>EL</i>	EVA7	TION T	OP OF BORING	-46.7 Ft.	; 0123	10
7. DEPTH DRILLED INT) POCK	N/A	17	7. TC	TAL I	RECO	VERY FOR BORING	88 %		
. DEI III DRIEEED IIVI			18	3. SI	GNAT	URE A	AND TITLE OF INSP	PECTOR		
3. TOTAL DEPTH OF B	RING	17.0 Ft.			V. J.	Thon	npson III, Civil E	Engineer		
ELEV. DEPTH BB		CLASSIFICATION OF MATERIALS		ĸĔĊ.	BOX OR SAMPLE	RQD OR UD		REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-46.7 0.0							-46.7			
	SAND,	poorly-graded with silt, mostly					- 4 0. <i>1</i>		0	
E I∴H	angular	to subangular fine to n-grained sand-sized quartz, fev		47	1			SPT Sampler	3	
F 1:11		to subangular shell up to 1-1/4		47	'			SPT Sampler		8
-48.2 1.5		, moderate cementation, 5Y 6/3	3 pale				-48.2		5	
E Itit	olive (S	อค-อเท) silty, mostly angular to subangเ	ular						11] <u> </u>
F III	fine to r	nedium-grained sand-sized qua	artz,	87	2			SPT Sampler	10] _, [
49.7 3.0	some a	ngular to subangular shell up to , wet, moderate cementation,	3/8",				-49.7		11	21
3.0 III	\5Y 6/3⊥	pale olive (SM)				1	-43.1		28	
		ONE, non-fossiliferous, moder		100	3			SPT Sampler		
-50.7 4.0		ightly weathered, fine grained, t g, bedding orientation, moist,	UNICK				-50.7		49	
Neat Neat	5Y 7/3	pale yellow								
	LIMES	ONÉ, hard, solid, 5Y 6/3 pale o	olive		_	L	4 x 5-1/2	" Diamond Impreg	nated Bit	
- sign				100	Run #1	RQD 33		DT = 5 mins HP = 300 psi		
-52.7 6.0 ₩					"	55		DFR = 0 %		
52.7 0.0 TI	LIMEST	ONE, soft, highly weathered, p	oitted,				50.0			
	clay fille	ed pits					-53.2			
					D	DO.	4 x 5-1/2	" Diamond Impreg	gnated Bit	
Highly Weathered				90	# 2	RQD 23		DT = 3 mins HP = 300 psi DFR = 0 %		
F 1 ±±	LΔ+ E1 .	58.2 Ft., massive bedding, bed	dina			Ш	-58.2			$\vdash \vdash$
		ion, 5Y 5/2 olive gray	ung							
							1 v 5 1/0	" Diamond Impreg	inated Bit	
					Run	RQD	4 X 5-1/2	Diamond impreg	jiiaieu Blī	
F				91	# 3			HP = 300 psi		
F [1]								DFR = 0 %		
├ <u>₩</u>	<u>_</u>									
[S1.1 Ft., moderately hard, slight	tly							
	weatne	red, 5Y 7/1 light gray						(Continued)		

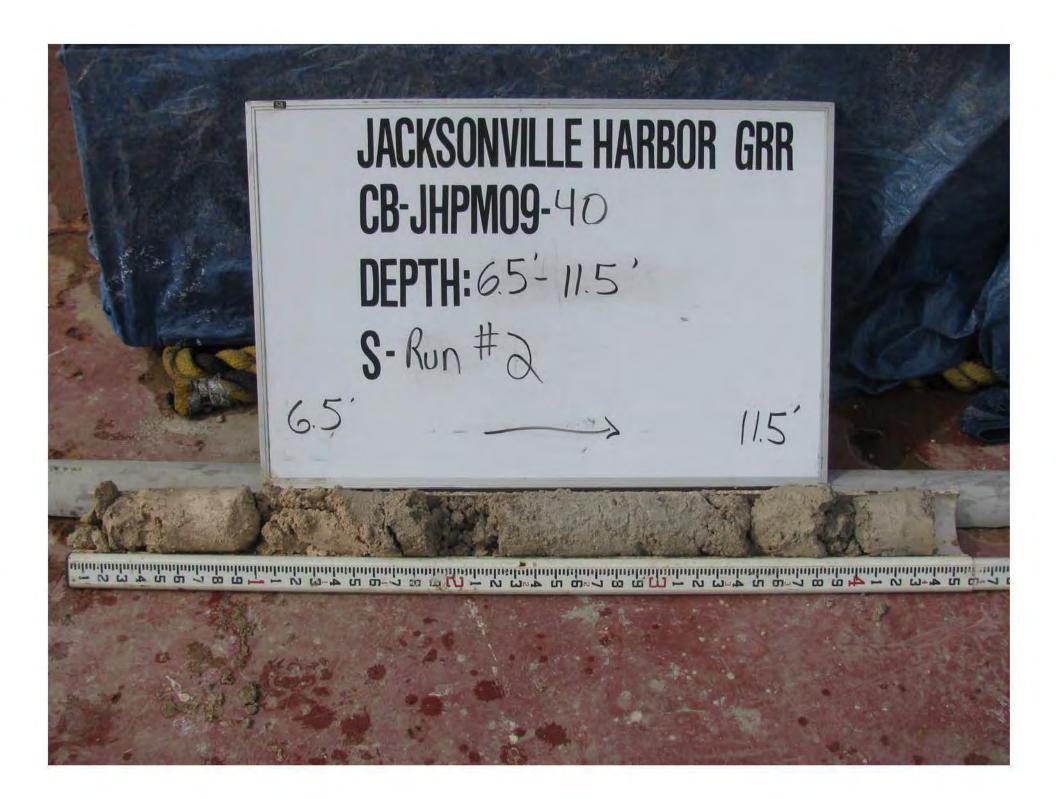
DRILLING LOG (Cont. Sheet) Jacksonville District		ET 2 2 SHEETS
PROJECT COORDINATE SYSTEM/DATUM	HORIZONTAL VERTICAL	
Jacksonville Harbor General Reevaluation Report (GRR) State Plane, FLE (U.S. Ft.)	NAD83 MLLW	'
LOCATION COORDINATES $X = 469,922 Y = 2,210,183$ $ELEVATION TOP OF BORING$ -46.7 Ft.		
		~. Ш
ELEV. DEPTH OF MATERIALS ROD OR OF WATERIALS REC. OF WATERIALS OF WATE	REMARKS 6	BLOWS/ 0.5 FT. N-VALUE
Run RQD # 3 55	x 5-1/2" Diamond Impregnated I DT = 6 mins HP = 300 psi DFR = 0 %	Bit -
NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in HP = 1	mmer w/30" drop used with spoon (1-3/8" I.D. x 2" O.D.).	













TEST CORE BORING NUMBER "CB-JHPM09-41"

gINT Boring Log Laboratory Curves Sample Photographs

		DIVISION	INCTA			g Designation CB-JHPM0		_				
DRILLING	LOG	South Atlantic	INSTAI Jac			istrict	SHEET 1 OF 2 SHEET	rs				
1. PROJECT	- Countries				E OF BIT See Remarks	1 2 3.7.227	丨					
Jacksonville Harbor General Reevaluation Report (GRR) BROWARD WIDENER				10. COORDINATE SYSTEM/DATUM HORIZONTAL VERTICAL								
				State Plane, FLE (U.S. Ft.) NAD83 MLLW								
BORING DESIGNATION LOCATION COORDINATES CB-JHPM09-41 X = 468,160 Y = 2,209,835				11. MANUFACTURER'S DESIGNATION OF DRILL Diedrich D-50 Truckrig MANUAL HAMMER								
3. DRILLING AGE		CONTRACTOR FILE NO.				DISTURBED	UNDISTURBED (UL	_				
		ering & Testing, Inc. 2009D08	12. To	OTAL .	SAMP	LES 12	0					
4. NAME OF DRIL			13. To	OTAL .	NUME	BER CORE BOXES 1						
Tim Clarks 5. DIRECTION OF		G DEG. FROM BEARING	14. EL	EVA7	TION C	GROUND WATER TIDAL						
∨ERTICAL		VERTICAL	15. Di	ATE R	OPINI	STARTED	COMPLETED	٦				
☐ INCLINED		i	-			02-01-10	02-01-10	_				
6. THICKNESS O	F OVERE	BURDEN N/A	16. El	EVAT	TION T	TOP OF BORING -47.8 Ft.		_				
7. DEPTH DRILLE	D INTO	ROCK N/A				VERY FOR BORING 83 %						
8. TOTAL DEPTH	OF BOR	RING 18.0 Ft.	18. SI			AND TITLE OF INSPECTOR mpson III, Civil Engineer						
1		10.0 1 1.			THOI	I Civil Engineer	ш	\dashv				
ELEV. DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REC	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT. N-VALUE	!				
47.9	1 1					47.0		٦				
-47.8 0.0	1//	CLAY, lean, low plasticity, very soft, trace	_			-47.8		\dashv				
F		organic matter, trace angular shell up to 1/8" wet, organic odor, 5Y 2.5/1 black (CL)				ODT 0 1	0	ŀ				
F		wet, organic odor, 5 Y 2.5/1 black (CL)	67	1		SPT Sampler	0 0	,				
F					-	-49.3	0	_				
<u> </u>							0	ļ				
ţ			100	2		SPT Sampler	0 0	,				
Ł						-50.8	0					
-		At El50.8 Ft., medium plasticity, very soft, discontinue shell					0	- 1				
F		discontinue shell	100	3		SPT Sampler	0					
F						-52.3	0 0	7 0 1				
‡					1	02.0	0	ヿ				
F			73	4		SPT Sampler	0	ţ				
<u>t</u>	<i>V//</i>		'			·	0 0	, I				
F					1	-53.8	1	\dashv				
F			100	_		CDT Commission		ŀ				
F-			100	5		SPT Sampler	1 2					
F	<i>V/A</i>				-	-55.3	1	4				
Ė.							1	ŀ				
‡			100	6		SPT Sampler	1 2	,				
Ł		At El56.6 Ft., little wood debris, few				-56.8	1 -					
E		organic matter, moist, 10YR 3/2 very dark grayish brown					0	ŀ				
F		grayisii biowii	80	7		SPT Sampler	0	ſ				
F						-58.3	1 1					
-					1	-	4					
ļ.			60	8		SPT Sampler	8	ı				
-59.5 - 11.7	<u> </u>	SAND cilty mostly angular to subangular				·	2 10)				
F		SAND, silty, mostly angular to subangular fine to medium-grained sand-sized quartz,			1	-59.8	2	\dashv				
F		little silt, moist, 5Y 3/2 dark olive gray (SM)				007.0						
-60.8 13.0		LIMESTONE, sandy, sparsely fossiliferous,	53	9		SPT Sampler	1 3	,				
į į	Signtly Weathered	very soft, slightly weathered, moist,				-61.3	2	_				
<u> </u>	I I I	5Y 6/2 light olive gray					3	ı				
<u> </u>			93	10		SPT Sampler	15 42	, l				
<u> </u>				L		-62.8	27	_}				
A LEODM 10	200					(Continued)		_				

			2 (0 + 0 +)	INSTALLA	TION		JOHH	g Designation CB-JHPM0	SHEET 2	
		LUC	G (Cont. Sheet)	Jackso	OF 2 SH	EETS				
PROJEC		arhor (General Reevaluation Report (GRR)	COORDINA State F	VERTICAL MLI W					
LOCATION COORDINATES			State Plane, FLE (U.S. Ft.) NAD83 MLLW ELEVATION TOP OF BORING							
X = 468,160 Y = 2,209,835				-47.8 F						
ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIA.	LS	ĸEC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
		III III	At El62.8 Ft., moderately hard		100	11		-63.1 SPT Sample	r 50/0.3'	
	Weathered		At El63.8 Ft., soft					Advanced Boring-64.3	ng 15	
-65.8	18.0 ¥				87	12		SPT Sampler		40
			NOTES: 1. USACE Jacksonville is the custo these original files. 2. Soils are field visually classified i accordance with the Unified Soils Classification System. 3. Set 64.5 ft. of 6" flush joint steel of the start of operations and referenced to the tid at the Navy Fuel Facility. 5. Water depth of -49.7 ft. recorded AM on 2/1/2010. Tide gage reading	n casing drilling al station				140# hammer w/30" drop used 2.0' split spoon (1-3/8" I.D. x 2"	with O.D.).	
			ft. mllw							
										 - - - - - -

